



7705 Service Aggregation Router Gen 2

Release 25.7.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 on the 7705 SAR Gen 2 in either the classic CLI or the MD-CLI.

See the *7250 IXR, 7450 ESS, 7705 SAR Gen 2, 7750 SR, 7950 XRS, and VSR Acronyms Reference Guide* for expansions of acronyms used in this guide.

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 *7705 SAR Gen 2 Classic CLI Command Reference Guide* and *7705 SAR Gen 2 MD-CLI Command Reference Guide*.



Note: This guide generically covers Release 25.x.Rx content and may contain some content that will be released in later maintenance loads. See the *SR OS R25.x.Rx Software Release Notes*, part number 3HE 21562 000x TQZZA, for information about features supported in each load of the Release 25.x.Rx software. For a list of features and CLI commands that are present in SR OS but not supported on the 7705 SAR Gen 2 platforms, see "SR OS Features not Supported on SAR Gen 2" in the *SR OS R25.x.Rx Software Release Notes*.

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>7705 SAR Gen 2 Clear, Monitor, Show, and Tools CLI Command Reference Guide</i>	All clear , monitor , show , and tools commands	All clear , monitor , show , and tools commands
<i>7705 SAR Gen 2 Classic CLI Command Reference Guide</i>	All other commands	—
<i>7705 SAR Gen 2 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
7705 SAR-1	7705 SAR Gen 2

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 Policer Summary

=====

AA-Subscriber

: Alex (esm)

=====

Type: single-bucket-bandwidth Direction: subscriber-to-network

=====

AQP Policer Resource Exceeded?

=====

61 SuspectUp_policer N

=====

Type: single-bucket-bandwidth Direction: network-to-subscriber

=====

AQP Policer Resource 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#

sw3088

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>7705 SAR Classic CLI Command Reference Guide</i> or the <i>7705 SAR Gen 2 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

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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 Platforms and terminology for more information about the platforms. Note: Some SR OS features are platform-specific and therefore may not be available or visible on all platforms. See the SR OS R25.x.Rx Software Release Notes, part number 3HE 21562 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

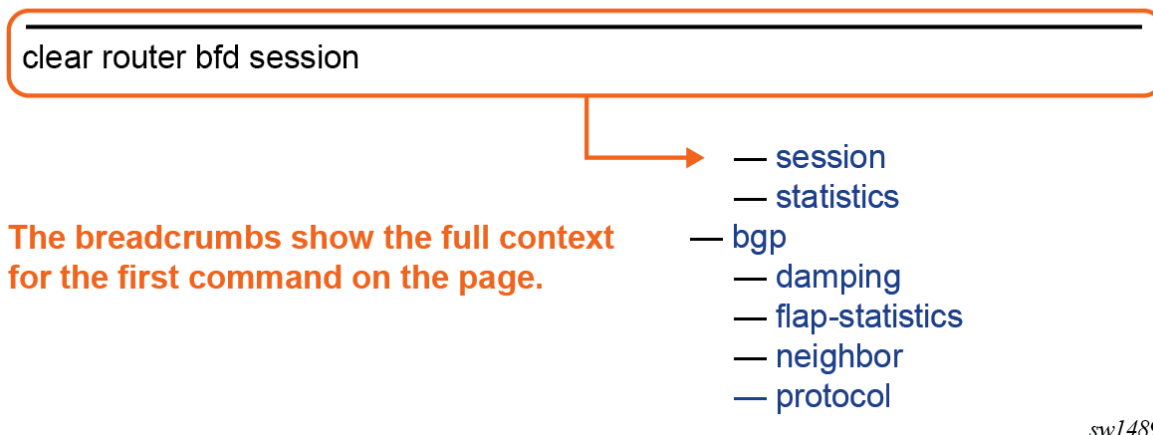
The following aids help you navigate the guide and find specific commands.

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



1.4.2 Search tips

Use the following search tips to easily find information about a specific command using a search function:

- Enter the command name in the search input field.
- To optimize your search, specify one or more levels of the contextual path before the command name.



Note: The Full Context section in each command description shows the full path to the command, as described in [Command descriptions](#).

- Do not include variables in the search phrase.

For example, to search for the **configure router mpls lsp igp-shortcut** command, entering "**lsp igp-shortcut**" is more efficient than "**igp-shortcut**" and limits the number of search results. Using "**lsp <lsp-name> igp-shortcut**" does not return any results.



Caution: Using a combination of hyphenated terms with other terms within the same quoted search phrase (for example, searching for "**cert-profile entry send-chain**") may produce inaccurate search results in WebHelp

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 3: Link to CLI tree

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. <small>sw3087</small>

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
    - radius-server-policy
  - card
  - filter
    - ip
    - ip-exception
    - ipv6
    - ipv6-exception
    - log
    - policer
      - filter-scope
      - system-scope
  - group-encryption
    - encryption-keygroup
  - ip
    - tunnel
  - ipsec
    - gateway
    - lockout
    - stats
      - ike-stats
    - transport-mode
    - tunnel
  - isa
    - lns-group
  - lag
  - ldap
  - log
    - event-handling
      - handler
      - information
    - log-events
    - log-id
  - macsec
    - mka-session
  - management-access-filter
    - ip-filter
    - ipv6-filter
    - mac-filter
  - mda
  - nat
    - classic-lsn-sub
    - isa
      - nat-group
  - oam-pm
  - port
    - ethernet
      - dampening
    - port-scheduler
  - qos
    - arbiter-stats
      - card
      - customer
      - port
```

clear qos arbiter-stats sap

```
    - 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
- router
  - arp
  - authentication
    - statistics
  - autoconfigure
    - dhcp-client
    - dhcp6-client
    - router-advertisement
      - statistics
  - bfd
    - session
    - statistics
  - bgp
    - damping
    - flap-statistics
    - neighbor
    - protocol
  - dhcp
    - local-dhcp-server
      - declined-addresses
      - failover-pool-stats
      - leases
      - pool-ext-stats
      - server-stats
      - sticky-leases
      - subnet-ext-stats
    - 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
  - icmp
  - icmp-redirect-route
  - icmp6
```

clear router icmp6-redirect-route

```
- icmp6-redirect-route
- igmp
  - database
  - mcast-reporting-statistics
  - statistics
  - version
- interface
- isis
  - adjacency
  - database
  - export
  - overload
  - spf-log
  - statistics
- ldp
  - fec-egress-statistics
  - instance
  - interface
  - peer
  - resource-failures
  - session
  - statistics
  - targeted-auto-rx
- mld
  - database
  - statistics
  - version
- mpls
  - forwarding-policies
    - binding-label
    - forwarding-policy
  - interface
  - lsp
    - auto-lsp
      - rsvp-te
      - sr-te
    - rsvp-te
    - sr-te
  - lsp-history
- neighbor
- origin-validation
- ospf
  - database
  - export
  - neighbor
  - overload
  - statistics
- ospf3
  - database
  - export
  - neighbor
  - overload
  - statistics
- pcep
  - pcc
    - peer
- pim
  - database
  - neighbor
  - s-pmsi
  - statistics
- rip
  - database
  - export
```

clear router rip statistics

```
- statistics
- ripng
  - database
  - export
  - statistics
- router-advertisement
- rsvp
  - interface
  - statistics
- segment-routing
  - sr-policies
    - ingress-statistics
- vrrp
  - interface
  - statistics
- saa
- screen
- service
  - id
    - arp
    - authentication
      - statistics
    - dhcp
      - lease-state
      - statistics
    - dhcp6
      - lease-state
      - statistics
    - evpn
    - fdb
    - gsmpp
      - statistics
    - host-tracking
    - igmp-snooping
      - port-db
      - querier
      - statistics
    - mesh-sdp
    - mfib
      - statistics
    - mld-snooping
      - port-db
      - querier
      - statistics
    - neighbor
    - proxy-arp
      - duplicate
      - dynamic
    - proxy-nd
      - duplicate
      - dynamic
    - sap
    - site
    - spoke-sdp
    - stp
      - detected-protocols
- statistics
  - id
    - counters
    - l2pt
    - mesh-sdp
    - pip
    - spoke-sdp
    - stp
```

clear service statistics sap

```
    - sap
    - sdp
    - subscriber
- system
  - management-interface
    - netconf
      - call-home
        - all-client
          - statistics
        - netconf-client
      - listen
        - statistics
    - remote-management
      - manager
      - statistics
  - reboot-required
  - script-control
    - script-policy
      - completed
  - statistics
- tacplus
- test-oam
  - oam-perf
  - twamp
    - server
- vrrp
  - statistics
```

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
  - filter
    - ip
    - ipv6
    - policer
      - filter-scope
      - system-scope
  - lag
  - management-access-filter
    - ip
    - ipv6
    - mac
  - oam-pm
    - session
      - twamp-light
  - port
  - port
    - port-scheduler
    - queue-group
  - qos
    - arbiter-stats
      - card
      - customer
      - port
      - sap
      - subscriber
    - scheduler-stats
      - customer
      - port
      - sap
      - subscriber
  - router
    - bgp
      - neighbor
    - isis
      - statistics
    - ldp
      - fec-egress-stats
      - session
      - statistics
    - mpls
      - forwarding-policies
        - binding-label
        - forwarding-policy
      - interface
```

monitor router mpls sr-te-lsp-egress-stats

```
    - sr-te-lsp-egress-stats
  - ospf
    - interface
    - neighbor
    - virtual-link
    - virtual-neighbor
  - ospf3
    - interface
    - neighbor
    - virtual-link
    - virtual-neighbor
  - pim
    - group
  - rip
    - neighbor
  - ripng
    - neighbor
  - rsvp
    - interface
  - segment-routing
    - sr-policies
      - ingress-statistics
  - vrrp
    - instance
- service
  - id
    - sap
    - sdp
- 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
    - radius-server-policy
  - alias
  - bof
  - boot-messages
  - card
    - virtual
      - fp
  - certificate
    - auto-cert-update
    - ca-profile
    - est-profile
    - ocsp-cache
    - statistics
  - chassis
  - config
  - connection-profile-vlan
  - datapath
  - debug
  - filter
    - dhcp
    - dhcp6
    - ip
    - ip-exception
    - ipv6
    - ipv6-exception
    - log
    - match-list
      - ip-prefix-list
      - ipv6-prefix-list
      - port-list
      - protocol-list
    - md-auto-id
    - policer
    - redirect-policy
    - redirect-policy-binding
    - system-filter
  - group-encryption
    - encryption-keygroup
    - summary
  - ip
    - tunnel
  - ipsec
    - cert-profile

```

show ipsec certificate

```
- 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
  - nat-group
  - nat-system-resources
  - statistics
    - ip-tunnel-stats
      - number-of-tunnels
      - 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
- lag
  - associations
  - flow-distribution
  - lacp-partner
  - lldp-member-template
  - port-scheduler
- licensing
- log
  - accounting-policy
  - accounting-records
  - applications
  - cli
    - all-subscriptions
  - event-control
  - event-handling
    - handler
    - information
    - scripts
  - event-parameters
```

show log file-id

```
- file-id
- filter-id
- log-collector
- log-id
- snmp-trap-group
- syslog
- macsec
  - connectivity-association
  - mka-session
- mda
- megapools
- mirror
- oam-pm
  - bin-group
  - bin-group-using
  - session
  - sessions
  - statistics
    - session
      - twamp-light
      - meas-interval
    - tests
- ospf
  - neighbor
- ospf3
  - neighbor
- pcap
- pools
- port
  - dist-cpu-protection
  - ethernet
    - lldp
  - port-scheduler
  - pxc
  - queue-group
- port-tree
- port-xc
- qos
  - agg-rate
    - customer
    - port
    - sap
    - subscriber
  - arbiter-stats
    - card
    - customer
    - port
    - sap
    - subscriber
  - bcg
  - dscp-table
  - match-list
    - ip-prefix-list
    - ipv6-prefix-list
  - md-auto-id
  - network
  - network-queue
  - policer
    - card
    - port
    - sap
    - subscriber
  - policer-control-policy
  - policer-hierarchy
```

show qos policer-hierarchy card

```
    - card
    - customer
    - port
    - sap
    - subscriber
  - port-scheduler-policy
  - post-policer-mapping
  - queue
  - queue-group
  - sap-egress
  - sap-ingress
  - scheduler-hierarchy
    - customer
    - port
    - sap
    - subscriber
  - scheduler-name
  - scheduler-policy
  - scheduler-stats
    - customer
    - port
    - sap
    - subscriber
- radius
- redundancy
  - bgp-evpn-multi-homing
  - bgp-multi-homing
  - multi-chassis
    - all
    - ipsec-domain
    - mc-endpoint
    - mc-ipsec
    - mc-lag
    - mc-ring
    - sync
  - synchronization
- router
  - aggregate
  - arp
  - authentication
    - statistics
  - autoconfigure
    - dhcp-client
    - dhcp6-client
    - router-advertisement
  - bfd
    - bfd-template
    - interface
    - resources
    - 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
```

show router bgp routes aspath-regex

```
- aspath-regex
- bgp-ls
  - ipv4-prefix
  - ipv6-prefix
  - link
  - node
- brief
- community
- detail
- evpn
  - auto-disc
  - eth-seg
  - incl-mcast
  - ip-prefix
  - ipv6-prefix
  - mac
  - mcast-join-synch
  - mcast-leave-synch
  - smet
  - spmsi-ad
- 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
- route-target
- sr-policy-ipv4
- sr-policy-ipv6
- vpn-ipv4
- vpn-ipv6
- sr-label
- summary
- 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
- dhcp6
  - local-dhcp-server
    - associations
    - failover-pool-stats
```

show router dhcp6 local-dhcp-server failover-server-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
- flexible-algorithm-definitions
- fp-tunnel-table
- icmp
  - interface
- icmp6
  - interface
- if-attribute
  - admin-group
  - srlg-group
- igmp
  - group
  - interface
  - mcast-reporting-statistics
  - ssm-translate
  - static
  - statistics
    - group-interface
  - status
- interface
  - ipsec
- isis
  - adjacency
  - capabilities
  - database
  - flex-algo
  - hostname
  - interface
  - lfa-coverage
  - link-group-member-status
  - link-group-status
  - mapping-server
  - prefix-sids
  - routes
  - spf-log
  - sr-adj-sets
  - sr-lfa-coverage
  - sr-lfa-info
  - statistics
  - status
  - summary-address
  - topology
  - unreachable-routes
- ldp
  - bindings
    - active
    - detail
```

show router ldp bindings active egress-if

```
    - egress-if
    - egress-lsp
    - egress-nh
    - ipv4
    - ipv6
    - prefixes
    - summary
  - detail
  - ipv4
  - ipv6
  - label-type
  - prefixes
  - services
  - session
  - summary
- discovery
- fec-egress-stats
- fec-originate
- interface
- parameters
- session
- session-parameters
- statistics
- statistics-summary
- status
- targ-peer
- targ-peer-template
- targ-peer-template-map
- tcp-session-parameters
- macsec
- mld
  - group
  - interface
  - ipsec-interface
  - ssm-translate
  - static
  - statistics
  - status
- mpls
  - bypass-tunnel
  - forwarding-policies
    - binding-label
    - forwarding-policy
    - status
  - interface
  - lsp
  - lsp-template
  - path
  - sr-te-lsp
  - srlg-database
  - static-lsp
  - status
- mpls-labels
  - label
  - label-range
  - summary
- mvpn
- mvpn-list
- nat
  - lsn-blocks
  - pool
  - summary
- neighbor
- network-domains
```

show router origin-validation

- origin-validation
 - database
 - rpki-session
- ospf
 - area
 - capabilities
 - database
 - flex-algo
 - hostname
 - interface
 - lfa-coverage
 - mapping-server
 - neighbor
 - opaque-database
 - prefix-sids
 - range
 - routes
 - sham-link
 - sham-link-neighbor
 - spf
 - sr-adj-sets
 - sr-lfa-coverage
 - statistics
 - status
 - virtual-link
 - virtual-neighbor
- ospf3
 - area
 - capabilities
 - database
 - hostname
 - interface
 - lfa-coverage
 - neighbor
 - range
 - routes
 - spf
 - sr-lfa-coverage
 - statistics
 - status
 - virtual-link
 - virtual-neighbor
- pcep
 - pcc
 - detail
 - lsp-db
 - p2mp-sr
 - path-request
 - pce-associations
 - diversity
 - policy
 - peer
 - status
- pim
 - anycast
 - crp
 - extranet-interface
 - group
 - interface
 - mc-ecmp-balance
 - neighbor
 - rp
 - rp-hash
 - s-pmsi

show router pim statistics

- statistics
 - status
 - tunnel-interface
- policy
- policy-edits
- radius-proxy-server
- radius-server
- rip
 - database
 - group
 - neighbor
 - peer
 - statistics
- ripng
 - database
 - 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
 - static
 - static-policy
 - 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
- saa
- service
 - customer
 - egress-label
 - endpoint-using
 - evpn-mpls
 - fdb-info
 - fdb-mac
 - id
 - all
 - arp
 - authentication

show service id auth statistics

```
- statistics
- base
- bgp
- bgp-ad
- bgp-evpn
  - evpn-l2-oper-attrs
- bgp-ipvpn
  - mpls
- bgp-vpls
- bgp-vpws
- dhcp
  - lease-state
  - statistics
  - summary
- dhcp6
  - lease-state
  - statistics
  - summary
- endpoint
- epipe
- etree
- evpn-mpls
- fdb
- gsmp
  - neighbors
  - sessions
- host-tracking
  - groups
  - saps
- i-vpls
- igmp-snooping
  - all
  - base
  - mrouter
  - port-db
  - proxy-db
  - querier
  - static
  - statistics
- interface
- l2-route-table
- l2pt
- labels
- log
  - filter-id
  - log-id
  - snmp-trap-group
  - syslog
- mac-move
- mac-protect
- macsec
- mfib
- mld-snooping
  - all
  - base
  - mrouter
  - port-db
  - proxy-db
  - querier
  - static
  - statistics
- mmp
- mstp-configuration
- mvrp
```

show service id proxy-arp

```
    - proxy-arp
    - proxy-nd
    - sap
    - sdp
    - site
    - source-address
    - split-horizon-group
    - spoke-sdp-fec
    - stp
    - twamp-light
    - vpls-group
  - ingress-label
  - ip-transport-using
  - l2-route-table
  - mac-list
  - md-auto-id
  - nat
    - cpm-nat-policy
    - lsn-subscribers
    - nat-policy
    - overview
    - port-forwarding-entries
      - classic-lsn-sub
    - statistics
  - oper-group
  - provider-tunnel-using
  - proxy-arp-nd
  - pw-routing
  - pw-template
  - pw-template-using
  - sai-type2-using
  - sap-using
    - aarp
    - app-profile
    - ethernet-segment
    - interface
    - mc-ring
  - sdp
  - sdp
  - sdp
  - sdp
  - sdp
  - sdp-group
  - sdp-group-using
  - sdp-using
    - ethernet-segment
  - service-name-using
  - service-using
  - site-using
  - spoke-sdp-fec-using
  - system
    - bgp-auto-rd
    - bgp-route-distinguisher
    - fdb-usage
  - taii-type2-using
  - template
    - vpls-sap-template
    - vpls-sap-template-using
    - vpls-template
    - vpls-template-using
  - vlan-aware-bundle
- snmp
  - counters
  - streaming
```

show snmp streaming counters

```
    - counters
- subscriber-mgmt
  - local-user-db
  - rip-policy
- system
  - alarms
  - candidate
  - connections
  - cpu
  - cpu
  - cron
    - schedule
  - dhcp6
  - file-transmission-profile
  - grpc
  - grpc-tunnel
    - tunnel
  - information
  - ip
  - license
  - lldp
  - load-balancing-alg
  - management-interface
    - commit-history
    - configuration-sessions
    - datastore-locks
    - remote-management
  - memory-pools
  - netconf
    - call-home
    - connection
    - counters
    - schema-path
  - ntp
  - rollback
  - script-control
    - script
    - script-policy
  - security
    - access-group
    - access-group
    - authentication
    - cli-session-group
    - dist-cpu-protection
      - policy
    - dot1x
    - hash-control
      - custom-hash
    - keychain
    - management
    - management-access-filter
      - ip-filter
      - ipv6-filter
      - mac-filter
    - password-options
    - password-options
    - profile
    - profile
    - snmp
      - community
      - src-access-list
    - source-address
    - ssh
    - tls
```

show system security tls cert-profile

```
    - cert-profile
    - client-tls-profile
    - server-tls-profile
    - trust-anchor-profile
  - user
  - view
- sntp
- telemetry
  - grpc
    - subscription
  - persistent
    - subscription
  - sensor-group
  - thresholds
  - time
- test-oam
  - oam-config-summary
  - oam-perf
  - twamp
    - client
    - server
    - twamp-light
      - reflectors
- time
- uptime
- users
- version
- vrrp
  - policy
```

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
    - auto-boot
    - dhcp-rx-stats
    - epipe-map-access-to-egress-port
    - epipe-map-to-network
    - esa
      - port-connectivity
    - filter
      - cam-utilization
      - overload
      - resources
        - cpm
        - dest-tracking
          - ip
          - ipv6
        - iom
        - ip
        - ipv6
        - mac
        - sticky-dest
    - ipsec
      - stats
        - ike-stats
      - transport-mode
        - stats
          - ike-stats
    - lag
    - log
      - subscriptions
      - subscriptions
    - mda
    - mpls-resources
    - nat
      - deterministic-mapping
      - histogram
      - isa
        - resources
        - sessions
    - ospf-overview
    - persistence
      - ancp
      - dhcp-server
      - nat-port-forwarding
      - submgt
      - summary
    - port
      - fp
        - statistics
```

tools dump port pcs

```
- pcs
- rs-fec
- qos
  - match-criteria-overload
- reassembly-resources
- redundancy
  - multi-chassis
    - mc-endpoint
    - mc-endpoint
    - mc-ring
    - sync-database
- resource-usage
  - card
    - fp
    - mda
  - system
- router
  - autoconfigure
    - dhcp-client
    - dhcp6-client
  - bfd
  - bgp
    - routes
  - dhcp
    - group-if-mapping
    - group-if-stats
  - dhcp6
    - group-if-mapping
  - fib
  - icmp-stats
  - isis
    - rlfa-backup-info
    - sr-adjacencies
    - sr-database
  - ldp
    - fec
    - import-pmsi-routes
    - instance
    - interface
    - memory-usage
    - peer
    - session
    - sockets
    - timers
  - mpls
    - bypass-tunnel
    - forwarding-policies
    - ftn
    - ilm
    - logger-event-bundling
    - lsp-history
    - lspinfo
    - memory-usage
    - te-lspinfo
  - mvpn
    - provider-tunnels
- ospf
  - abr
  - area-range
  - asbr
  - bad-packet
  - leaked-routes
  - memory-usage
  - request-list
```

tools dump router ospf retransmission-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
  - pcep
    - pcc
      - lsp
      - p2mp-sr
  - pim
    - iom-failures
  - rsvp
    - neighbor
    - psb
    - rsb
    - tcsb
  - segment-routing
    - tunnel
  - static-route
  - te-database
    - isis
    - ospf
    - ospf3
  - web-rd
    - http-client
  - security
    - dist-cpu-protection
    - violators
  - service
    - base-stats
    - evpn
    - id
      - evpn
      - evpn-mpls
      - fdb
        - card-status
        - mac-status
      - ignore-sap-port-state
      - interface
        - ignore-sap-port-state
      - loopback
    - ignore-sap-port-state
    - iom-stats
    - l2pt-diags
    - loopback
    - mc-endpoint
    - proxy-arp
    - proxy-nd
    - system
    - vpls-fdb-stats
    - vpls-mfib-stats
  - system
```

tools dump system congestion-status

```
    - congestion-status
    - nsp-proxy
      - history
    - security
      - secure-boot
      - uefi-vars
    - telemetry
      - expand-wildcard-path
      - on-change-paths
  - test-oam
    - twamp
      - server
      - error-counters
- perform
  - auto-boot
  - card
    - power-cycle
  - chassis
    - check-bp-eprom
  - filter
    - ip-filter
      - entry
        - activate-primary-action
    - ipv6-filter
      - entry
        - activate-primary-action
    - redirect-policy
      - activate-best-dest
  - ipsec
    - client-db
    - ike-initiate
    - transport-mode
      - ike-initiate
  - lag
    - clear-force
    - force
  - log
    - generate-event
    - subscribe-to
    - test-event
    - unsubscribe-from
  - mda
  - nat
    - deterministic
      - calculate-maps
    - port-forwarding-action
      - lsn
  - persistence
    - downgrade
  - port
  - redundancy
    - forced-single-sfm-overload
    - issu-post-process
    - multi-chassis
      - mc-ipsec
        - force-switchover
          - domain
          - tunnel-group
      - sync-database-reconcile
  - router
    - autoconfigure
    - dhcp-client
    - dhcp6-client
    - bgp
```

tools perform router bgp next-hop-reprogram

```
    - 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
  - mcac
    - recalc
  - mpls
    - cspf
    - force-switch-path
    - manual-switch-path
    - resignal
    - resignal-bypass
    - revert
    - sr-te-cspf
    - switch-path
    - trap-suppress
    - update-path
  - ospf
    - ldp-sync-exit
    - overload
    - refresh-lsas
    - run-manual-spf
  - ospf3
    - ldp-sync-exit
    - overload
    - refresh-lsas
    - run-manual-spf
  - pim
    - mc-ecmp-rebalance
  - security
    - authentication-server-check
    - dist-cpu-protection
      - release-hold-down
  - service
    - eval-pw-template
    - eval-vpls-sap-template
    - eval-vpls-template
    - id
      - admin-lock
        - pw
        - sdp
    - endpoint
      - force-switchover
```

tools perform service id eval-pw-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
- pw-routing
  - eval-expired-fec
  - spoke-sdp-fec-release
- subscriber-mgmt
  - local-user-db
    - ipoe
      - host-lookup
- system
  - auto-node-provisioning
    - file
    - ipv4
    - ipv6
  - management-interface
    - configuration-mode
    - snmp
      - change-key
      - generate-key
  - nsp-proxy
    - clear-history
  - script-control
    - script-policy
      - stop
- ssh
  - gen-keypair
```

3 a Commands

3.1 aaa

aaa

Syntax

aaa

Context

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

Full Context

clear aaa

Description

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

Platforms

7705 SAR Gen 2

aaa

Syntax

aaa

Context

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

Full Context

show aaa

Description

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

Platforms

7705 SAR Gen 2

3.2 abort-startup-wait

abort-startup-wait

Syntax

abort-startup-wait

Context

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

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

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

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

Full Context

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

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

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

tools perform router dhcp local-dhcp-server 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

7705 SAR Gen 2

3.3 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

7705 SAR Gen 2

Output

The following output is an example of access group information.

Table 4: Output fields: system security access group 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 no-security
snmp-ro         snmpv2c  none       no-security no-security no-security
snmp-rw         snmpv1   none       no-security no-security no-security
snmp-rw         snmpv2c  none       no-security no-security no-security
snmp-rwa        snmpv1   none       iso         iso         iso
snmp-rwa        snmpv2c  none       iso         iso         iso
snmp-trap       snmpv1   none              iso         iso
snmp-trap       snmpv2c  none              iso         iso
=====
A:ALA-7#
```

Table 4: Output fields: system security access group

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

7705 SAR Gen 2

Output

The following output is an example of access group information.

[Table 5: Output fields: system security access group](#) 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
-----
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
-----
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: Output fields: system security access group

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.

3.4 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

7705 SAR Gen 2

Output

The following output is an example of accounting policy information.

Table 6: Output fields: accounting policy 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             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             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
-----
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
-----
10     access  Yes Up    Up    5         3  complete-service-ingress
=====
A:ALA-1#

```

Table 6: Output fields: accounting policy

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.

3.5 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

7705 SAR Gen 2

Output

The following output is an example of accounting records output information.
[Table 7: Output fields: accounting records](#) describes accounting records output fields.

Table 7: Output fields: accounting records

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

```
# 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
10	combined-service-ingress	5

Record Type	Accounting Record Name	Default Interval
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

Record Type	Accounting Record Name	Default Interval
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

Record Type	Accounting Record Name	Default Interval
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

3.6 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

7705 SAR Gen 2

3.7 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>ip-filter>entry activate-primary-action)

Full Context

tools perform filter ipv6-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

7705 SAR Gen 2

3.8 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
7705 SAR Gen 2

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	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 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			

```

RootAddr      Op      IngLbl  EgrLbl
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      IngLbl  EgrLbl
RootAddr      Interface
EgrNH         EgrIf/LspId
-----
No Matching Entries Found
=====

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

```

```

EgrNH                                EgrIf/LspId
-----
No Matching Entries Found
=====

LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source
Group                                Interface
RootAddr                            Op      IngLbl  EgrLbl
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                    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
=====
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

```

```

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 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
RootAddr     Op           IngLbl    EgrLbl
EgrNH        EgrIf/LspId
-----
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	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: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      IngLbl      EgrLbl
RootAddr      Op      EgrIf/LspId
EgrNH
-----
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   | IngLbl   | EgrLbl |
|--------------|-------------|----------|--------|
| RootAddr     | Op          |          |        |
| 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 RootAddr EgrNH	Interface Op EgrIf/LspId	IngLbl	EgrLbl
8193 192.168.1.1 192.168.110.110	77156 Swap 3/1/5:1	255042	259773
8193 192.168.1.1 192.168.110.110	77156 Swap 3/1/5:1	258780BU	259773
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
*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          255042      259773
192.168.1.1   Swap           3/1/5:1
192.168.110.110

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

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

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

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

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

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

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

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

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

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

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		
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#			

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
192.168.1.1
10.3.0.1
10.20.1.3 (LF)
10.20.1.6
10.0.101.10
192.168.1.1
10.33.0.1
Unknw
Push
lag-1
--
262139

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

-----
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
EgrNextHop
Op
EgrIf/LspId
IngLbl
EgrLbl
-----
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
=====

```

3.9 adjacency

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

7705 SAR Gen 2

Output

Standard and Detailed IS-IS Adjacency Output

[Table 9: Output fields: adjacency](#) describes the standard and detailed command output fields for an IS-IS adjacency.

Table 9: Output fields: adjacency

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.
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"> MT#0, MT#2 => "Topology : Unicast, IPv6-Unicast" Native IPv4 or native IPv6 => "Topology : Unicast" 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 Supressed : 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 Supressed : 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

7705 SAR Gen 2

3.10 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

7705 SAR Gen 2

Output

The following output is an example of administrative group statistics, and [Table 10: Output fields: administrative group](#) 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 10: Output fields: administrative group

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

3.11 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
7705 SAR Gen 2

3.12 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

7705 SAR Gen 2

3.13 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
7705 SAR Gen 2

Output
The following output is an example of router aggregate information, and [Table 11: Output fields: aggregate](#) 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    0.0.0.0    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       0.0.0.0  0.0.0.0    0.0.0.0          0.0.0.0  0      Active  None
```

False	False 100:33	Inactive Blackhole

No. of Aggregates: 1		
=====		

Table 11: Output fields: aggregate

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.
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.

3.14 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

7705 SAR Gen 2

Output

Table 12: Output fields: system alarms 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

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	

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 12: Output fields: system alarms

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

3.15 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
7705 SAR Gen 2

Output
The following output is an example of alias information, and [Table 13: Output fields: alias](#) 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 13: Output fields: alias

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.

3.16 all

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
7705 SAR Gen 2

Output
The following output is an example of all service ID information, and [Table 14: Output fields: service ID all](#) 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
MTU               : 1514
Vc Switching      : False
SAP Count         : 2
Per Svc Hashing   : Disabled
Vxlan Src Tep Ip  : N/A
Force QTag Fwd    : Disabled
Oper Group        : <none>
Oper State        : Up
SDP Bind Count    : 0

-----
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
Description        : (Not Specified)
Admin 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
Split Horizon Group : (Not Specified)
QinQ Ethertype    : 0x8100
Encap             : null
Oper State        : Up

LLF Admin State   : Down
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
Endpoint          : N/A
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled
Vlan-translation  : None
Qinq-vlan-translation : None
Acct. Pol         : None
Application Profile : None
Transit Policy     : None
Oper Group        : (none)
Host Lockout Plcy : n/a
Ignore Oper Down   : Disabled

LLF Oper State    : Clear
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
Qinq-vlan-translation Ids : None
Collect Stats     : Disabled
Monitor Oper Grp  : (none)

```

```

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.
-----
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 14: Output fields: service ID all describes the Show service ID output fields when the **all** option is specified.

Table 14: Output fields: service ID all

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
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

Label	Description
Flags	The conditions that affect the operating status of this SAP. Display output includes: ServiceAdminDown, SapAdminDown, InterfaceAdminDown, PortOperDown, PortMTUTooSmall, L2OperDown, SapIngressQoSMismatch, SapEgressQoSMismatch, RelearnLimitExceeded, RxProtSrcMac, ParentIfAdminDown, NoSapIpCelpAddr, SapParamMismatch, CemSapNoEcidOrMacAddr, StandByForMcRing, ServiceMTUTooSmall, NoSapEpipeRingNode.
SAP Count	The number of SAPs specified for this service
SDP Bind Count	The number of SDPs bound to this service
Split Horizon Group Specifics	
Split Horizon Group	The name of the split horizon group for this VPLS
Description	The description of the split horizon group
Last Changed	The date and time of the most recent management-initiated change to this split horizon group
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	The type of delivery used by the SDP: GRE or MPLS
Admin State	The administrative state of this SD
Oper State	The operational state of this SDP
Jitter Buffer (packets)	The jitter buffer length in number of packet buffers
Playout Threshold (packets)	The playout buffer packets threshold in number of packet buffers
Playout Threshold (packets)	Indicates the current packet depth of the jitter buffer
Peer Pw Bits	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

Label	Description
	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. 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 signaled-vc-type-override option for Apipes. This field is only displayed if signaled-vc-type-override is configured.

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
7705 SAR Gen 2

Output
The following output is an example of service MLD snooping information.

Output Example

```
*A:rbac_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
                  Mode      Type      From-VPLS  Up Time      Expires      Src      Stdby
-----
Number of groups: 0
-----
MLD Snooping SAP 2/1/5 Port-DB
-----
Group Address      Mode      Type      From-VPLS  Up Time      Expires      Num      MC
                  Mode      Type      From-VPLS  Up Time      Expires      Src      Stdby
-----
Number of groups: 0
-----
MLD Snooping SDP 31:1 Port-DB
-----
Group Address      Mode      Type      From-VPLS  Up Time      Expires      Num Src
                  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

7705 SAR Gen 2

Output

The following output is an example of IGMP snooping information.

Output Example

```
*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 mrouters: 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#

```

Table 15: Output fields: IGMP snooping all describes the show all service ID command output fields:

Table 15: Output fields: IGMP snooping all

Label	Description
Admin State	The administrative state of the IGMP instance

Label	Description
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
7705 SAR Gen 2

Output
The following output is an example of multi-chassis all information, and [Table 16: Output fields: redundancy multi-chassis all](#) 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 stdby      : 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          1          -      32768
331/2/3      up    active   up          1          -      32768
331/2/4      up    active   up          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 16: Output fields: redundancy multi-chassis all

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
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

7705 SAR Gen 2

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
NumActPathChange: 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
  2 MPLS Label : 524280
Weight         : 1
Last Change    : 08/17/2023 17:11:08
State          : resolved-up
State          : N/A
-----
Type           : srMpls
Active         : Yes
Color          : 10
Head           : 0.0.0.0
Owner          : static
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
=====
```

3.17 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

7705 SAR Gen 2

3.18 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

7705 SAR Gen 2

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 17: Output fields: PIM anycast provides PIM anycast field descriptions

Table 17: Output fields: PIM anycast

Label	Description
Anycast Address	Displays the candidate anycast address.
Anycast RP Peer	Displays the candidate anycast RP peer address.

3.19 application

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 R25.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

7705 SAR Gen 2

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.

3.20 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

7705 SAR Gen 2

Output

The following output is an example of log application information.

Output Example

```
*A:node-2# show log applications
=====
Log Event Application Names
=====
Application Name
-----
BGP
...
CHASSIS
...
IGMP
...
LDP
...
MIRROR
...
MPLS
...
OSPF
PIM
...
PORT
...
SYSTEM
...
USER
```

```
...
VRTR
...
=====
A:ALA-1#
```

3.21 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
7705 SAR Gen 2

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
7705 SAR Gen 2

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

7705 SAR Gen 2

3.22 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

7705 SAR Gen 2

Output

The following outputs are examples of OSPF area outputs.

Table 18: Output fields: OSPF area describes the standard and detailed command output fields for an OSPF area.

Table 18: Output fields: OSPF area

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).

Label	Description
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 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#
```

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

7705 SAR Gen 2

Output

OSPF Area Output

The following table describes the standard and detailed command output fields for an OSPF area.

Table 19: Output fields: OSPv3 area

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.
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.

Label	Description
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
SPF Runs           : 0
Router LSAs        : 0
Summary LSAs       : 0
Nssa ext LSAs      : 0
Total LSAs         : 1
Blackhole Range    : False
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
Key Rollover Int.: 10
Virtual Links     : 1
Active IFs        : 0
Area Bdr Rtrs     : 0
SPF Runs          : 0
Router LSAs       : 0
Summary LSAs      : 0
Nssa ext LSAs     : 0
Total LSAs        : 1
Blackhole Range   : True
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
Active IFs        : 3
Area Bdr Rtrs     : 0
SPF Runs          : 7
Router LSAs       : 3
Summary LSAs      : 0
Nssa ext LSAs     : 0
Total LSAs        : 9
Blackhole Range   : True
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#
```

3.23 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

7705 SAR Gen 2

Output

The following output is an example of service ID information. [Table 20: Output fields: service ID ARP](#) 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 20: Output fields: service ID ARP

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 static-arp commands. Managed — Learned from DHCP snooping or configured by host 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

7705 SAR Gen 2

```
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 lpipe and VPRN services.

Platforms

7705 SAR Gen 2

```
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

7705 SAR Gen 2

Output

ARP Table Output — The following output is an example of router ARP table information, and [Table 21: Output fields: ARP](#) 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 21: Output fields: ARP

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
[I]	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

3.24 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

7705 SAR Gen 2

3.25 associations

associations

Syntax

associations

Context

- [Tree] (show>router>dhcp>local-dhcp-server associations)
- [Tree] (show>router>dhcp6>local-dhcp-server associations)

Full Context

show router dhcp local-dhcp-server associations
show router dhcp6 local-dhcp-server associations

Description

This command displays the interfaces associated with this DHCP or DHCP6 server.

Platforms

7705 SAR Gen 2

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 22: Output fields: DHCP summary describes DHCP associations fields.

Table 22: Output fields: DHCP summary

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 64

Platforms

7705 SAR Gen 2

3.26 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

7705 SAR Gen 2

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 Port        : 0
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#
```

3.27 authentication

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

7705 SAR Gen 2

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

7705 SAR Gen 2

authentication

Syntax

authentication

Context

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

Full Context

show router authentication

Description

This command enables the command to display authentication statistics.

Platforms

7705 SAR Gen 2

authentication

Syntax

authentication

Context

[\[Tree\]](#) (clear>router authentication)

Full Context

clear router authentication

Description

This command clears authentication related data.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of authentication information.

Table 23: Output fields: system security authentication describes system security authentication output fields.

Output Example

A:ALA-4# show system security authentication statistics

Authentication sequence : radius tacplus ldap local			
type	server address	status	timeout (secs)
	server name		retry count
radius	192.168.0.10:1812	up	3
tacplus	192.168.1.10:49	up	n/a
ldap	10.1.1.1:389	up	3
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 23: Output fields: system security authentication

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

Label	Description
sent pkts	The number of packets sent
rejected pkts	The number of packets rejected

3.28 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:x[-interface]
x:x:x:x:x:x:d.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 64characters.

source address *ip-address*
Specifies the source address used for the access-request message.

Values	<i>ipv4-address</i>	a.b.c.d
	<i>ipv6-address</i>	x:x:x:x:x:x:x (eight 16-bit pieces) x: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.

Values	<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

7705 SAR Gen 2

3.29 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

7705 SAR Gen 2

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

7705 SAR Gen 2

3.30 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 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

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

7705 SAR Gen 2

Output

The following output is an example of BGP-EVPN auto discovery route information, and [Table 24: Output fields: BGP route auto discovery](#) describes the output fields.

Output Example

```
show router bgp routes evpn auto-disc rd 192.0.2.4:500 hunt
```

```
=====
BGP Router ID:192.0.2.2      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 Auto-Disc Routes
=====
-----
RIB In Entries
-----
Network       : n/a
Nexthop       : 2001:db8::4
Path Id       : None
From          : 2001:db8::4
Res. Nexthop  : fe80::4446:ffff:fe00:142
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : target:64500:500 l2-attribute:MTU: 1514 V: Double-VID M:
                Default F: 1 C: 1 P: 0 B: 0 bgp-tunnel-encap:MPLS
Cluster       : No Cluster Members
Originator Id : None
Interface Name : int-PE-2-PE-4
Aggregator    : None
MED           : None
IGP Cost      : 10
Peer Router Id : 192.0.2.4
```

```

Origin       : IGP
Flags        : Used Valid Best
Route Source : Internal
AS-Path      : No As-Path
EVPN type    : AUTO-DISC
ESI          : ESI-0
Tag          : 4
Route Dist.  : 192.0.2.4:500
MPLS Label   : LABEL 524273
Route Tag    : 0
Neighbor-AS  : n/a
DB Orig Val  : N/A
Source Class : 0
Add Paths Send : Default
Last Modified : 02h16m32s

Final Orig Val : N/A
Dest Class     : 0

```

RIB Out Entries

Routes : 1
=====

Table 24: Output fields: BGP route auto discovery

Label	Description
BGP Router ID	Displays the BGP router ID
AS	Displays the AS
Local AS	Displays the local AS
BGP EVPN Auto-Disc Routes	
RIB In Entries	
Network	Displays the network name
Nexthop	Displays the next-hop IP address
Path Id	Displays the path ID value
From	Displays the from IP address
Res. Nexthop	Displays the reserved next-hop address
Local Pref.	Displays the local preference value
Interface Name	Displays the interface name
Aggregator AS	Displays the aggregatpr AS value
Aggregator	Displays the aggregator
Atomic Aggr.	Displays the atomic aggregator type
MED	Displays the MED value

Label	Description
AIGP Metric	Displays the AIGP metric value
IGP Cost	Displays the IGP cost value
Connector	Displays the connector value
Community	Displays the following values: <ul style="list-style-type: none"> target — the target ID MTU — the MTU value V — the V flag value M — the M flag value F — the F flag value C — the C flag value P — the P flag value B — the B flag value bgp-tunnel-encap — the BGP tunnel encapsulation type
Cluster	Displays the cluster type
Originator Id	Displays the originator ID
Peer Router Id	Displays the peer router IP address
Origin	Displays the origin type
Flags	Displays the flag type
Route Source	Displays the route source type
AS-Path	Displays the AS path type
EVPN type	Displays the EVPN type
ESI	Displays the ESI name
Tag	Displays the tag value
Route Dist.	Displays the route distinguisher
MPLS Label	Displays the MPLS label
Route Tag	Displays the route tag
Neighbor-AS	Displays the neighbor AS value
DB Orig Val	Displays the database originating value
Final Orig Val	Displays the final originating value

Label	Description
Source Class	Displays the source class value
Dest Class	Displays the destination class value
Add Paths Send	Displays the add paths send value
Last Modified	Displays the number of hours, minutes, and seconds since the last modification
RIB Out Entries	
Routes	Displays the number of routes

3.31 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

7705 SAR Gen 2

3.32 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

7705 SAR Gen 2

3.33 autoconfigure

autoconfigure

Syntax

autoconfigure

Context

[\[Tree\]](#) (clear>router autoconfigure)

Full Context

clear router autoconfigure

Description

Commands in this context clear router autoconfiguration information.

Platforms

7705 SAR Gen 2

autoconfigure

Syntax

autoconfigure

Context

[\[Tree\]](#) (show router autoconfigure)

Full Context

show router autoconfigure

Description

Commands in this context display IP autoconfiguration information.

Platforms

7705 SAR Gen 2

autoconfigure

Syntax

autoconfigure

Context

[\[Tree\]](#) (tools dump router autoconfigure)

Full Context

tools dump router autoconfigure

Description

Commands in this context display router autoconfigure information.

Platforms

7705 SAR Gen 2

autoconfigure

Syntax

autoconfigure

Context

[\[Tree\]](#) (tools perform router autoconfigure)

Full Context

tools perform router autoconfigure

Description

Commands in this context perform router autoconfigure operations.

Platforms

7705 SAR Gen 2

4 b Commands

4.1 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

7705 SAR Gen 2

Output

The following output is an example of base service ID information, and [Table 25: Output fields: service ID base](#) 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 25: Output fields: service ID base

Label	Description
Service Id	Displays the service identifier
Vpn Id	Displays the VPN ID assigned to the service
Service Type	Displays the type of service: Epipe, Apipe, Fpipe, Ipipe, VPLS, IES, VPRN

Label	Description
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
Def. Gateway IP	Displays the default gateway
Def. Gateway MAC	Displays the default gateway MAC address
Temp Flood Time	Displays the temporary flood time

Label	Description
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 ignore-l2-mtu-mismatch 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
PBB Tunnel Point	Displays the endpoint in the B-VPLS environment where the Epipe terminates
Admin MTU	Displays the B-VPLS admin MTU

Label	Description
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

7705 SAR Gen 2

4.2 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-identf*] [**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 µs, and 100 µs BCG is supported. An FP4- or FP5-based Q-chip has an additional four BCGs with target visitation times of 50 µs, 10 µs, 5 µs, and 1 µs. 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-visitation time and the longest-seen-visitation 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-visitation-time>[-<direction>]*
 slot - 1 to 20
 fp - 1 to 8
 target-visitation-time -1 μs, 5 μs, 10 μs, 50 μs, 100 μs, 500 μs, 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

7705 SAR Gen 2

4.3 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

4.4 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

7705 SAR Gen 2

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.
```

4.5 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

7705 SAR Gen 2

Output

The following output is an example of BGP-related information, and [Table 26: Output fields: service ID 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-expl
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 26: Output fields: service ID 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

Label	Description
Oper Rt Export	Displays the operational RT export information
ADV Service MTU	Displays the MTU value that is configured using the adv-service-mtu 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

7705 SAR Gen 2

bgp

Syntax

bgp

Context

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

Full Context

show router bgp

Description

Commands in this context display BGP related information.

Platforms

7705 SAR Gen 2

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
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

7705 SAR Gen 2

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
Color           : 50
Head            : 0.0.0.0
RD              : 5
SRv6 BSID 1    : 1111:1:1:1:0:b::
TunnelId        : 917511
Origin ASN      : 2
NumReEval       : 7
NumActPathChange : 0
Maintenance Policy: N/A

Owner           : bgp
Endpoint Addr   : 3ffe::a14:102
Preference      : 14
Age             : 0
Origin          : 3ffe::a14:102
ReEvalReason    : tunnel-down
Last Change     : 06/13/2022 17:45:57

Path Segment Lists:
Segment-List     : 1
S-BFD State      : Down
Num Segments     : 2
  Seg 1 SID      : 3333:3:3:3:0:a::
  Seg 2 SID      : 2222:2:2:2:0:a::

Weight           : 1
S-BFD Transitio*: 0
Last Change      : 06/10/2022 17:07:01
State           : resolved-up
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
Color           : 50
Head            : 0.0.0.0
RD              : 5
SRv6 BSID 1    : 1111:1:1:1:0:b::
TunnelId        : 917511
Origin ASN      : 2
NumReEval       : 2
NumActPathChange : 0
Maintenance Policy: N/A

Owner           : bgp
Endpoint Addr   : 3ffe::a14:102
Preference      : 14
Age             : 0
Origin          : 3ffe::a14:102
ReEvalReason    : tunnel-down
Last Change     : 06/13/2022 17:45:57

Path Segment Lists:
Segment-List     : 1
S-BFD State      : Down
Num Segments     : 2
  Seg 1 SID      : 3333:3:3:3:0:a::
  Seg 2 SID      : 2222:2:2:2:0:a::

Weight           : 1
S-BFD Transitio*: 0
Last Change      : 06/10/2022 17:07:01
State           : resolved-up
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

7705 SAR Gen 2

4.6 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

7705 SAR Gen 2

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
=====
```

4.7 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

7705 SAR Gen 2

Output

The following output is an example of BGP EVPN information and [Table 27: Output fields: service ID 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 27: Output fields: service ID BGP-EVPN

Label	Description
BGP EVPN Table	
EVI	The EVI value
Creation Origin	The creation origin
Local AC Name	The local AC name
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

Label	Description
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
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

Label	Description
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 MplsUdp      : 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
-----
=====
```

4.8 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

7705 SAR Gen 2

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
=====
```

4.9 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

7705 SAR Gen 2

Output

The following output is an example of BGP IPVPN information, and [Table 28: Output fields: BGP-IPVPN](#) describes the output fields.

Table 28: Output fields: BGP-IPVPN

Label	Description
Admin State	Specifies the administrative state

Label	Description
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 Import	Specifies the route target import
Route Target Export	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 Import: None
Route Target Export: None
D-Path Domain-Id  : 65000:1
<snip>
```

4.10 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

7705 SAR Gen 2

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
Nexthop         : 38.120.48.199
From            : 38.120.48.199
Res. Nexthop     : 0.0.0.0
Local Pref.      : 100
Aggregator AS    : None                  Interface Name : NotAvailable
Atomic Aggr.     : Not Atomic            Aggregator      : None
AIGP Metric      : None                  MED             : None
Connector        : None
Community        : No Community Members
Cluster          : No Cluster Members
Originator Id    : None                  Peer Router Id  : 38.120.48.199
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                     Dest 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
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
Nextthop       : 38.120.48.221
From           : 38.120.48.221
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 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
-----
  
```

4.11 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

7705 SAR Gen 2

4.12 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 255

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

7705 SAR Gen 2

Output

The following table describes the command output fields for the **show router bgp optimal-route-reflection bgp-nh-info** command output.

Table 29: Output fields: ORR BGP next-hop information

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							

4.13 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

```
7705 SAR Gen 2
```

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
=====
```

4.14 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

7705 SAR Gen 2

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#
```

4.15 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

7705 SAR Gen 2

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

4.16 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

7705 SAR Gen 2

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
```

4.17 binding-label

binding-label

Syntax

- `binding-label [/abe/] [detail]`
- `binding-label [/abe/] egress-stats`
- `binding-label [/abe/] 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

7705 SAR Gen 2

Output

[Table 30: Output fields: MPLS binding label](#) describes MPLS binding label output fields.

Table 30: Output fields: MPLS binding label

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.

Label	Description
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.
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

7705 SAR Gen 2

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
7705 SAR Gen 2

4.18 bindings

bindings

Syntax
bindings

Context
[Tree] (show>router>ldp bindings)

Full Context
show router ldp bindings

Description
This command displays LDP bindings information.

Platforms
7705 SAR Gen 2

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	IngLbl	EgrLbl
RootAddr	Op		
EgrNH	EgrIf/LspId		

```

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

```

```

=====
LDP Generic IPv6 P2MP Bindings (Active)
=====

```

P2MP-Id	Interface	IngLbl	EgrLbl
RootAddr	Op		
EgrNH	EgrIf/LspId		

```

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

```

```

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

```

Source	Interface	IngLbl	EgrLbl
Group	Op		
RootAddr	EgrIf/LspId		
EgrNH			

```

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

```

```

=====
LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====

```

```

Source
Group                                Interface
RootAddr                            Op
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====

Source
Group                                RD
RootAddr                            Interface
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

=====
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====

Source
Group                                RD
RootAddr                            Interface
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
                               LspId
-----
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                               Interface                               IngLbl                               EgrLbl
RootAddr                               EgrIf/LspId
EgrNH
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	Interface	IngLbl	EgrLbl
RootAddr	EgrIf/LspId		
EgrNH			
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	RD		
Group	Interface	IngLbl	EgrLbl
RootAddr	EgrIf/LspId		
EgrNH			
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
RootAddr
EgrNH
Peer
RD
Interface
EgrIf/LspId
IngLbl
EgrLbl
-----
10.1.1.1
225.0.0.1
2000::3000
10.60.60.1
10.2.2.2:100
10.1.1.1:100
Unkwn
1/1/1
--
100

10.1.1.1
225.0.0.1
2000::3000
10.60.60.1
10.2.2.2:100
10.1.1.1:100
Unkwn
1/1/1
--
100

10.1.1.1
225.0.0.1
2000::3000
10.60.60.1
10.2.2.2:100
10.1.1.1:100
Unkwn
1/1/1
--
100
-----
No. of In-Band-VPN-SSM IPv6 P2MP Bindings: 3
=====

=====
LDP Service FEC 128 Bindings
=====
=====
Type
Peer
VCId
SvcId
SDPId
IngLbl
LMTU
EgrLbl
RMTU
-----
?-Eth
10.2.2.2:0
100
Ukwn
R. Src
--
None
131023D 986

?-Eth
10.2.2.2:0
500
Ukwn
R. Src
--
None
131022D 1386

?-Eth
10.2.2.2:0
2001
Ukwn
R. Src
--
None
131019D 986

?-Eth
10.2.2.2:0
2003
Ukwn
R. Src
--
None
131017D 986

?-Ipipe
10.2.2.2:0
1800
Ukwn
R. Src
--
None
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			

4.19 bof

bof

Syntax

bof [*cflash-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

7705 SAR Gen 2

Output

The following output is an example of BOF, and [Table 31: Output fields: BOF](#) 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 31: Output fields: BOF

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.

Label	Description
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.
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.

Label	Description
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.

4.20 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

7705 SAR Gen 2

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 0x0000000002200000 to 0x0000000080000000
```

```
>>>Testing SDRAM from 0xffffffff00000000 to 0xffffffff00000000
>>>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:
```

4.21 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

7705 SAR Gen 2

4.22 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

7705 SAR Gen 2

Output

The following output is an example of MPLS bypass tunnel information, and [Table 32: Output fields: MPLS bypass tunnel](#) 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 32: Output fields: MPLS bypass tunnel

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 33: Output fields: MPLS bypass tunnel detail](#) 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 33: Output fields: MPLS bypass tunnel detail

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

/sp-name

Specifies the LSP name up to 64 characters in length.

plr

Specifies the point of local repair (PLR).

Platforms

7705 SAR Gen 2

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
```

5 c Commands

5.1 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

7705 SAR Gen 2

5.2 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.

Values	
<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

7705 SAR Gen 2

5.3 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. 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

7705 SAR Gen 2

Output

The following output is an example of CAM utilization information for filters.

Output Example

```
*A:7705# 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

5.4 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
7705 SAR Gen 2

Output
The following output is an example of candidate information, and [Table 34: Output fields: candidate](#) 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 34: Output fields: candidate

Label	Description
Candidate configuration state	<ul style="list-style-type: none"> • empty — indicates there are no uncommitted changes in the candidate config • modified — indicates there are uncommitted changes in the candidate config • 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
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 candidate edit exclusive command
Last commit state	<ul style="list-style-type: none"> • none — indicates there have been no commits since the last reboot of the node • in-progress — indicates the system is currently committing the candidate config • success — indicates the last commit finished successfully • 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 • failed — indicates the last commit failed and has been undone • revert-in-progress — indicates the last commit finished successfully but was not confirmed in time and is currently being reverted • reverted — indicates the last commit finished successfully but was not confirmed in time and has been reverted • revert-failed — indicates the last commit finished successfully but was not confirmed in time and the system attempted to revert it but failed
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

Label	Description
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)

5.5 capabilities

capabilities

Syntax

capabilities [*system-id* | *lsp-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

7705 SAR Gen 2

Output

The following output is an example of IS-IS capability information, and [Table 35: Output fields: IS-IS capabilities](#) 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 35: Output fields: IS-IS capabilities

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>ospf3 capabilities)
- [Tree] (show>router>ospf capabilities)

Full Context

show router ospf3 capabilities
show router ospf 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

7705 SAR Gen 2

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
=====
```

5.6 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* **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 displays 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 1, A

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

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

7705 SAR Gen 2

Output

The following outputs are examples of card information, and the associated tables describe the output fields:

- [Output Example: show card](#), [Output Fields: show card](#)
- [Output Example: show card state](#), [Output Example: show card state](#)
- [Output Example: show card <slot-number> detail \(showing IOM with license detail\)](#), [Output Fields: show card <slot-number> detail \(showing IOM with license level\)](#)

Output Example: show card

```
*A:Dut-BG# show card 1

=====
Card 1
=====
Slot      Provisioned Type      Admin Operational  Comments
          Equipped Type (if different)  State State
-----
1         iom-sar                up    up
=====
```

Output Fields: show card

Table 36: Output fields: card describes the output fields for the **show card** command.

Table 36: Output fields: card

Label	Description
Slot	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. Down — The card is operationally down. active — The CPM is the Active CPM for the system (actively managing the system components, processing various protocols, and so on). standby — The CPM is the Standby CPM. The standby is hot synchronized with the Active CPM.
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 state

```
*A:Dut-BG# show card state

=====
```

Card State						
Slot/ Id	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Num Ports	Num MDA	Comments
1	iom-sar	up	up		3	
1/1	m10-sfp++6-sfp	up	up	16		
1/2	isa-tunnel-v	up	up	2		
	isa-ms-v					
1/3	isa-bb-v	up	up	7		
	isa-ms-v					
A	cpm-sar	up	up			Active

Output Fields: show card state

Table 37: Output fields: card state describes the output fields for the **show card state** command.

Table 37: Output fields: 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 IOM with license detail)

```
*A:Dut-BG# show card 1 detail
```

=====				
Card 1				
=====				
Slot	Provisioned Type	Admin Operational		Comments
	Equipped Type (if different)	State	State	

1	iom-sar	up	up	
IOM Card Specific Data				
Clock source : none				
Fail On Error : Disabled				
Available MDA slots : 3				
Installed MDAs : 3				
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				
Initial Extract Priority Mode : uniform				
Network ingress queue policy : default				
Hardware Data				
Platform type : 7705				
Part number : Sim Part#				
CLEI code : Sim CLEI				
Serial number : card-1				
Manufacture date : 01012003				
Manufacturing deviations : Sim MfgDeviation card-1				
Manufacturing assembly number : 01-2345-67				
Administrative state : up				
Operational state : up				
Software boot (rom) version : simulated				
Software version : TiMOS-B-0.0.I8066 both/x86_64 Nokia 7705				
SAR Copyright (c) 2000-2025 Nokia.				
All rights reserved. All use subject to				
applicable license agreements.				
Built on Thu Mar 20 01:10:58 UTC 2025 by				
builder in /builds/00/I8066/panos/main/srux				
Time of last boot : 2025/03/20 14:19:30				
Current alarm state : alarm cleared				
Base MAC address : a0:33:01:00:00:00				
Firmware revision status : acceptable				
Last bootup reason : hard boot				
Memory capacity : 4,096 MB				
=====				

Output Fields: show card <slot-number> detail (showing IOM with license level)

Table 38: Output fields: card detail (showing IOM with license level) describes the output fields for the show card detail command with IOM licensing information.

Table 38: Output fields: card 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. 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 39: Output fields: card forwarding plane forwarding engine drop reason describes the output fields for the **show card fp fwd-engine drop-reason** command.

Table 39: Output fields: card forwarding plane forwarding 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: CPU utilization

```
A:node-2# show card 1 cpu sample-period 1
=====
Card a CPU Utilization (Sample period: 1 second)
=====
```

Name	CPU Time (uSec)	CPU Usage	Capacity Usage
Agg Schedulers Algorithm	2,188	0.01%	0.18%
Agg Shapers Algorithm	444	~0.00%	0.04%
BFD	78	~0.00%	~0.00%
BGP	0	0.00%	0.00%
BGP PE-CE	0	0.00%	0.00%
BIER	0	0.00%	0.00%
CALLTRACE	226	0.01%	0.02%
CFLOWD	21	~0.00%	~0.00%
Cards & Ports	4,151	0.20%	0.34%
DCPU Control	3555	0.01%	0.01%
DHCP Server	7	~0.00%	~0.00%
ETH-CFM	430	0.02%	0.02%
HPol Algorithm	333	0.00%	0.00%
HPol Statistics	333	0.00%	0.00%
HQoS Algorithm	444	~0.00%	0.04%
HQoS Statistics	2188	0.01%	0.18%
ICC	54	~0.00%	~0.00%
IGMP/MLD	93	~0.00%	~0.00%
IMSI Db Appl	21	~0.00%	~0.00%
IOM	0	0.00%	0.00%
IP Stack	1,335	0.06%	0.04%
IS-IS	162	~0.00%	~0.00%
ISA	1,044	0.05%	0.04%
LDP	241	0.01%	0.02%
Logging	15	~0.00%	~0.00%
MBUF	0	0.00%	0.00%
MCS	37	~0.00%	~0.00%
MPLS/RSVP	738	0.03%	0.04%
MSCP	0	0.00%	0.00%
MSDP	0	0.00%	0.00%
Management	1,690	0.08%	0.07%

OAM	1,219	0.06%	0.03%
OSPF	892	0.04%	0.02%
PIM/L2Mcast	0	0.00%	0.00%
PKI	15	~0.00%	~0.00%
PTP	14	~0.00%	~0.00%
RIP	0	0.00%	0.00%
RTM/Policies	0	0.00%	0.00%
Redundancy	743	0.03%	0.04%
SDN Protocols	5	~0.00%	~0.00%
SIM	2,488	0.12%	0.23%
SNMP Daemon	0	0.00%	0.00%
Security	0	0.00%	0.00%
Services	725	0.03%	0.02%
Stats	0	0.00%	0.00%
Stats-Extended	0	0.00%	0.00%
Subscriber Mgmt	549	0.02%	~0.00%
System	8,833	0.44%	0.37%
Traffic Eng	0	0.00%	0.00%
Tree Sid	0	0.00%	0.00%
VRRP	144	~0.00%	~0.00%
WEB Redirect	62	~0.00%	~0.00%

Total	2,004,289	100.00%	
Idle	1,978,257	98.70%	
Usage	26,032	1.29%	
Busiest Core Utilization	13,154	1.31%	
=====			

Table 40: Output fields: card CPU sample-period

Label	Description
Name	The name of the CPU task
CPU Time (uSec)	The CPU usage time, in microseconds
CPU Usage	The CPU usage as a percentage of the total sampled time
Capacity Usage	<p>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 CPU Usage column. This column is the busiest task in each group, where busiest is defined as either actually running or blocked attempting to acquire a lock.</p>
Total	The total CPU time measured in the sample period
Idle	The total CPU idle time
Usage	The total CPU usage time
Busiest Core Utilization	The CPU utilization of the busiest core

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 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.

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

```

```

A - 1/1    Best-Effort    0          0          0
           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

A - 1/1	Best-Effort	0	0
	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

7705 SAR Gen 2

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

fp-number

Specifies the FP number associated with the queue group.

Values 1

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

7705 SAR Gen 2

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

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

7705 SAR Gen 2

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

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

7705 SAR Gen 2

5.7 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
7705 SAR Gen 2

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#
```

5.8 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

7705 SAR Gen 2

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

7705 SAR Gen 2

5.9 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

7705 SAR Gen 2

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 State	Oper State	Cert File	CRL File
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
=====
=====

```

5.10 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.
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

7705 SAR Gen 2

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
```

5.11 chassis

chassis

Syntax

chassis [environment] [power-supply]

chassis detail

Context

[Tree] (show chassis)

Full Context

show chassis

Description

This command displays general status information about the chassis.

Parameters

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.

Platforms

7705 SAR Gen 2

Output

The following outputs are examples of chassis information, and [Table 41: Output fields: chassis](#) describes the output fields.

- [Output example: show chassis](#)
- [Output example: show chassis environment](#)

Output example: show chassis

```
*A:Dut-BG# show chassis
=====
System Information
=====
Name                : Dut-BG
Type                : 7705 SAR-1
Chassis Topology    : Standalone
Location            : (Not Specified)
Coordinates         : (Not Specified)
CLLI code           :
Number of slots     : 2
Oper number of slots : 2
Num of faceplate ports/connectors : 25
Num of physical ports : 25
Critical LED state   : Red
Major LED state      : Off
Minor LED state      : Off
Over Temperature state : OK
```

```
Base MAC address      : 00:13:fe:00:00:00
FP Generations       : VFP
System Profile        : profile-a
OS-Security Password : disabled
Anti-Theft Locked     : false

=====
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      : 1

Fan tray number         : 1
  Speed                  : 33 %
  Status                 : up

=====
```

Output example: show chassis power-supply

```
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

=====
```

Table 41: Output fields: 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">Standalone – indicates that the system is comprised of a single physical router chassis

Label	Description
Chassis Status	The status of the chassis
Chassis role	The chassis role
Location	The system location for the device
Coordinates	<p>A user-configurable string that indicates the Global Positioning System (GPS) co-ordinates for the location of the chassis</p> <p>For example:</p> <ul style="list-style-type: none"> • N 45 58 23, W 34 56 12 • N37 37' 00 latitude, W122 22' 00 longitude • N36°39.246' W121°40.121'
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 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 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 show chassis output, the first section of Hardware Data output is for the chassis midplane.

Label	Description
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
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"> Chassis – standard fan tray
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.

Label	Description
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
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"> Up — The card is administratively up Down — The card is administratively down
Operational state	The operational state of the card: <ul style="list-style-type: none"> Up — The card is operationally up Down — The card is operationally down
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"> Up — The CF is administratively up Down — The CF is administratively down
Operational state	The operational state of the CF: <ul style="list-style-type: none"> Up — The CF is operationally up Down — The CF is operationally down
Serial number	The serial number of the CF

Label	Description
Firmware revision	The firmware revision
Model number	The model number of the CF
Size	The size of the CF
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

7705 SAR Gen 2

5.12 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

7705 SAR Gen 2

5.13 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

7705 SAR Gen 2

5.14 clear

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

7705 SAR Gen 2

5.15 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

7705 SAR Gen 2

5.16 clear-history

clear-history

Syntax

clear-history

Context

[Tree] (tools>perform>system>nsp-proxy clear-history)

Full Context

tools perform system nsp-proxy clear-history

Description

This command clears the NSP proxy history.

Platforms

7705 SAR Gen 2

5.17 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

7705 SAR Gen 2

5.18 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

7705 SAR Gen 2

5.19 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

7705 SAR Gen 2

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
=====
```

5.20 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

7705 SAR Gen 2

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

7705 SAR Gen 2

5.21 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

7705 SAR Gen 2

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
=====
```

5.22 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

7705 SAR Gen 2

Output

The following output is an example of commit history information, and [Table 42: Output fields: commit history](#) 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 42: Output fields: commit history

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.

5.23 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

7705 SAR Gen 2

Output

The following output is an example of SNMP community information.

[Table 43: Output fields: community](#) 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          src-access-list  version  group name
-----
my-public2     r      no-security   my-list1         v1 v2c   snmp-ro
                                     my-list1         5
-----
A:ALA-1#
```

Table 43: Output fields: community

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 community configuration command.
authFailures	Displays the number of SNMP requests that have failed validation using this community .
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** *lt: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

7705 SAR Gen 2

5.24 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

7705 SAR Gen 2

5.25 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

7705 SAR Gen 2

5.26 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

7705 SAR Gen 2

5.27 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

7705 SAR Gen 2

Output

The following output is an example of configuration session information. [Table 44: Output fields: configuration sessions](#) 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	Idle Time
Session Type		From	

#65	configure	Candidate	Unlocked
admin		Private	0d 00:00:00
MD-CLI		192.168.0.10	
66	configure	Candidate	Unlocked
admin		Private	0d 00:05:41
MD-CLI		192.168.0.10	
67	configure	Candidate	Unlocked
admin		Private	0d 00:05:08
MD-CLI		192.168.0.10	
68	configure	Candidate	Unlocked
admin		Read-Only	0d 00:02:25
MD-CLI (2)		192.168.0.10	
69	configure	Candidate, Running	Locked
admin		Exclusive	0d 00:01:54

```

MD-CLI                               192.168.0.10
-----
Number of sessions: 5
'#' indicates the current active session
'(n)' indicates the number of internal sessions
=====

```

Table 44: Output fields: configuration sessions

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.

5.28 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

7705 SAR Gen 2

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
=====	=====	=====

5.29 connections

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[-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

7705 SAR Gen 2

Output

The following outputs are examples of system connections information, and [Table 45: Output fields: system connections](#) 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
UDP    0    0 0.0.0.0.67      --- 4095
        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    --- 1
        0.0.0.0.0
UDP    0    0 0.0.0.0.123     --- 4095
        0.0.0.0.0
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 rexmit 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 45: Output fields: system connections

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">vRtrID 0 — listens for connections in all routing instances including the Base and management VRFs.vRtrID 1 — Base routing instancevRtrID 4095 — management routing instance MSS — The TCP maximum segment size.

5.30 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

7705 SAR Gen 2

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 46: Output fields: MACsec connectivity association describes the output fields for the **show macsec connectivity-association** command.

Table 46: Output fields: 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 : aabbccddeeff00112233445566778899
=====
```

Output Fields: show macsec connectivity-association <ca-name>

Table 47: Output fields: MACsec connectivity association name describes the output fields for the **show macsec connectivity-association <ca-name>** command.

Table 47: Output fields: MACsec connectivity association 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.

Label	Description
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 48: Output fields: 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             :  
=====
```

5.31 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

7705 SAR Gen 2

Output

Table 49: Output fields: BGP convergence 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 49: Output fields: BGP convergence

Label	Description
Min wait advertise timer	The operational value of min-wait-to-advertise (0 if the feature is disabled) Use the min-wait-to-advertise command in the configure router bgp convergence 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 min-wait-to-advertise 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
First session established time	The time, relative to BGP instance restart at time T=0, when the first address family session was established. This stops being tracked when the min-wait-to-advertise timer expires.
Last session established time	The time, relative to BGP instance restart at time T=0, when the last address-family session was established.
Max Wait advertise timer	The operational value of the max-wait-to-advertise command for the address family (0 if the feature is disabled) Use the max-wait-to-advertise command in the configure router bgp convergence family 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.

Label	Description
Converged peers	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.
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 min-wait-to-advertise timer expired have sent the EOR marker.</p> <p>The partial to timeout transition occurs when the max-wait-to-advertise timer expires and not all address family peers that have been up continuously since the min-wait-to-advertise timer expired have sent the EOR marker.</p>
Converged time	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.

5.32 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

7705 SAR Gen 2

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
7705 SAR Gen 2

Output
The following output is an example of SNMP counter information.
[Table 50: Output fields: counters](#) 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 50: Output fields: counters

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

7705 SAR Gen 2

Output

The following output is an example of SNMP streaming counters information.

[Table 51: Output fields: streaming counters](#) 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 51: Output fields: streaming counters

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.

5.33 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

7705 SAR Gen 2

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			
=====			

5.34 cpm-nat-policy

cpm-nat-policy

Syntax

cpm-nat-policy *[policy-name]*

Context

[\[Tree\]](#) (show>service>nat cpm-nat-policy)

Full Context

show service nat cpm-nat-policy

Description

This command displays CPM NAT policy information.

Parameters

policy-name

Specifies the CPM NAT policy name, up to 32 characters. If a policy is not specified, the system displays summary information of all configured CPM NAT policies.

Platforms

7705 SAR Gen 2

Output

The following output is an example of CPM NAT policy information, and [Table 52: Output fields: CPM NAT policy](#) describes the output fields.

Output example

```
show service nat cpm-nat-policy
=====
CPM NAT policy demo-cpm-nat-policy
=====
Description                               : (Not Specified)
Filtering                                 : endpointIndependent
Port usage High Watermark (%)             : (Not Specified)
Port usage Low Watermark (%)              : (Not Specified)
Port forwarding limit                     : 0
Session limit                             : 100
Session usage High Watermark (%)          : (Not Specified)
Session usage Low Watermark (%)           : (Not Specified)
ALG enabled                              : ftp
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
UDP inbound refresh                       : false
TCP MSS Adjust                            : (Not Specified)
Last Mgmt Change                          : 06/17/2025 15:01:02
=====
```

Table 52: Output fields: CPM NAT policy

Label	Description
Description	Displays the policy description
Filtering	Displays the filtering method for inbound traffic
Port usage High Watermark (%)	Displays the port usage high watermark percentage
Port usage Low Watermark (%)	Display the port usage low watermark percentage
Port forwarding limit	Displays the maximum number of port forwarding entries per NAT subscriber
Session limit	Displays the maximum number of sessions allowed per NAT subscriber
Session usage High Watermark (%)	Displays the session usage high watermark percentage

Label	Description
Session usage Low Watermark (%)	Displays the session usage low watermark percentage
ALG enabled	Displays the ALG configuration for the policy
Timeout TCP established (s)	Displays the idle timeout for established TCP sessions
Timeout TCP transitory (s)	Displays the idle timeout for TCP sessions in the transitory state
Timeout TCP SYN (s)	Displays the timeout for TCP sessions when synchronizing the initial state
Timeout TCP TIME-WAIT (s)	Displays the timeout for TCP sessions in the time-wait state
Timeout UDP mapping (s)	Displays the timeout for UDP mappings
Timeout UDP initial (s)	Displays the timeout for new UDP mapping sessions
UDP inbound refresh	Displays whether the router extends the UDP session timeout on inbound traffic
TCP MSS Adjust	Displays the value used to configure the TCP MSS adjust option
Last Mgmt Change	Displays the date and time of the last management change

5.35 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

7705 SAR Gen 2

Output

The following output is an example of CPU information, and [Table 53: Output fields: system CPU](#) 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/RSPV                          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 53: Output fields: system CPU

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>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 CPU Usage column. This column is the busiest task in each group, where busiest is defined as either actually running or blocked attempting to acquire a lock.</p>
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

7705 SAR Gen 2

Output

The following output is an example of system CPU information. [Table 54: Output fields: system CPU](#) 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)
-----
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 54: Output fields: system CPU

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 CPU Usage column. This column is the busiest task in each group, where busiest is defined as either actually running or blocked attempting to acquire a lock.</p>

5.36 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.

Values	esa-vm:	esa-id/vm-id
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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
=====

```

5.37 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

7705 SAR Gen 2

5.38 cron

```
cron
```

Syntax

cron

Context

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

Full Context

show system cron

Description

Commands in this context display CRON information.

Platforms

7705 SAR Gen 2

5.39 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

7705 SAR Gen 2

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 55: Output fields: PIM CRP provides PIM CRP field descriptions.

Table 55: Output fields: PIM CRP

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.
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.

5.40 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

7705 SAR Gen 2

5.41 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

7705 SAR Gen 2

5.42 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

7705 SAR Gen 2

Output

The following output is an example of customer information, and [Table 56: Output fields: customer](#) 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 56: Output fields: customer

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.
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.

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of customer scheduler hierarchy information, and [Table 57: Output fields: QoS scheduler hierarchy customer](#) 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 57: Output fields: QoS scheduler hierarchy customer

Label	Description
Legend	Admin CIR/PIR: Specifies the configured value of CIR/PIR.

Label	Description
	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.
Lvl/Wt	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. 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 as compared 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 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.
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

7705 SAR Gen 2

Output

The following output is an example of SAP scheduler-stats customer information, and [Table 58: Output fields: QoS scheduler statistics customer](#) 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 58: Output fields: QoS scheduler statistics customer

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

7705 SAR Gen 2

Output

The following output is an example of QoS customer aggregation rate output, and [Table 59: Output fields: QoS aggregation rate customer](#) 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 59: Output fields: QoS aggregation rate customer

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the limit-unused-bandwidth 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.

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

6 d Commands

6.1 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

7705 SAR Gen 2

6.2 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

7705 SAR Gen 2

Output

The following output is an example of BGP damping information, and [Table 60: Output fields: BGP damping](#) 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 60: Output fields: BGP damping

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

7705 SAR Gen 2

6.3 database

database

Syntax

database [*ip-address* [*/ 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

7705 SAR Gen 2

Output

The following output is an example of RIP route database information, and [Table 61: Output fields: RIP database](#) 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 61: Output fields: RIP database

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

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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* | */sp-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

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Output

The following output is an example of the IS-IS link state database information, and [Table 62: Output fields: IS-IS database](#) 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
Sequence    : 0x13b
Version     : 1
Attributes: L1
SYS ID      : 4900.0000.0004
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
Checksum    : 0x1917
Lifetime    : 827
Pkt Type   : 18
Pkt Ver    : 1
Max Area   : 3
Alloc Len  : 179
SysID Len  : 6
Used Len   : 179

```

```

        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
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                      Level      : L2
Sequence    : 0x4b7                            Checksum    : 0xe654    Lifetime    : 891
Version     : 1                                Pkt Type    : 20       Pkt Ver     : 1
Attributes: L1L2                             Max Area    : 3        Alloc Len   : 1492
SYS ID      : 4900.0000.0002                  SysID Len   : 6        Used Len    : 271
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-FlexAlg Algo:128, Metric:100
-----
LSP ID      : Dut-C.00-00                      Level      : L2
Sequence    : 0x4b2                            Checksum    : 0xa4f1  Lifetime    : 1158
Version     : 1                                Pkt Type    : 20     Pkt Ver     : 1
Attributes: L1L2                              Max Area    : 3      Alloc Len   : 226
SYS ID      : 4900.0000.0003                  SysID Len   : 6      Used Len    : 226
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
  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 62: Output fields: IS-IS database

Label	Description
Flex-Algorithm	The flexible algorithm number
Priority	Displays the FAD priority; It is the tiebreaker when multiple FADs are received

Label	Description
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.

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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>ospf database)

[\[Tree\]](#) (show>router>ospf3 database)

Full Context

show router ospf database

show router ospf3 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.

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Output

OSPF Database Output

Table 63: Output fields: OSPF database describes the standard and detailed command output fields for an OSPF database.

Table 63: Output fields: OSPF database

Label	Description
Area Id	The OSPF area identifier.
Type	Router — LSA type of router (OSPF)
LSA Type	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)
	Area opaque — LSA type of area opaque (OSPF)

Label	Description
	<p>router — LSA type of router (OSPF3)</p> <p>Network — LSA type of network (OSPF3)</p> <p>IE Pfx — LSA type of inter-area prefix (OSPF3) Newline IE Rtr</p> <p>LSA type of inter-area router (OSPF3)</p> <p>IA Pfx — LSA type of intra-area prefix (OSPF3)</p>
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	<p>EA — External Attribute LSA Support</p> <p>DC — Demand Circuit Support</p> <p>R — If clear, a node can participate in OSPF topology distribution without being used to forward transit traffic.</p> <p>N — Type 7 LSA Support</p> <p>MC — Multicast Support</p> <p>E — External Routes Support</p> <p>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.</p>
Prefix Options	<p>P — Propagate NSSA LSA.</p> <p>MC — Multicast support.</p> <p>LA — Local address capability. If set, the prefix is an IPv6 interface address of the advertising router.</p> <p>NU — No unicast capability. If set, the prefix is excluded from IPv6 unicast calculations.</p>

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. Note: 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 Metric (1)       : 0
Pfx Options (1): LA
Prefix (2)    : 3ffe::3300:d00/120 Metric (2)       : 100
Pfx Options (2):
Prefix (3)    : 3ffe::100:d00/120 Metric (3)       : 100
Pfx Options (3):
Prefix (4)    : 3ffe::3300:2400/120 Metric (4)       : 100
Pfx Options (4):
Prefix (5)    : 3ffe::100:2400/120 Metric (5)       : 100
Pfx Options (5):
Prefix (6)    : 3ffe::100:900/120 Metric (6)       : 200
Pfx Options (6):
Prefix (7)    : 3ffe::3300:2103/128 Metric (7)       : 0
Pfx Options (7): LA
Prefix (8)    : 3ffe::100:2103/128 Metric (8)       : 0
Pfx Options (8): LA
-----
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 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
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    :                 Metric            : 0
Dest Prefix    : 3ffe::a14:106/128

```

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  : 0.0.0.3 (3)
LSA Type      : IE Pfx
Sequence No    : 0x80000001      Checksum       : 0xb9b
Age           : 328             Length          : 44
Pfx Options    :                 Metric            : 100
Dest Prefix    : 3ffe::100:3705/128

```

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  : 0.0.0.4 (4)
LSA Type      : IE Pfx
Sequence No    : 0x80000001      Checksum       : 0x83ef
Age           : 328             Length          : 44
Pfx Options    :                 Metric            : 100
Dest Prefix    : 3ffe::3300:3705/128

```

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  : 0.0.0.5 (5)
LSA Type      : IE Pfx
Sequence No    : 0x80000001      Checksum       : 0x5d60
Age           : 328             Length          : 44
Pfx Options    :                 Metric            : 100
Dest Prefix    : 3ffe::a14:105/128

```

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  : 0.0.0.6 (6)
LSA Type      : IE Pfx
Sequence No    : 0x80000001      Checksum       : 0x1932
Age           : 328             Length          : 44
Pfx Options    :                 Metric            : 200
Dest Prefix    : 3ffe::100:2c04/128

```

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 : 0.0.0.8 (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
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
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
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
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
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>ospf database)

[Tree] (clear>router>ospf3 database)

Full Context

clear router ospf database

clear router ospf3 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

7705 SAR Gen 2

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:x [-interface]
x: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
 - 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

7705 SAR Gen 2

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

7705 SAR Gen 2

6.4 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

7705 SAR Gen 2

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
=====
```

6.5 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

7705 SAR Gen 2

Output

The following output is an example of detail datastore locks information for all datastores. [Table 64: Output fields: datastore locks](#) 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 Type      Session Mode      Idle Time
From
-----
6            configure       Candidate          Unlocked
admin        Global          0d 00:00:09
MD-CLI (1)   Console
-----
Number of sessions: 1
'#' indicates the current active session
'(n)' indicates the number of internal sessions
=====
```

Table 64: Output fields: datastore locks

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.

6.6 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

7705 SAR Gen 2

6.7 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

7705 SAR Gen 2

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#
```

6.8 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

7705 SAR Gen 2

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 65: Output fields: declined addresses pool describes declined address pool output fields.

Table 65: Output fields: declined addresses pool

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

7705 SAR Gen 2

6.9 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

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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
=====
```

6.10 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

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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

7705 SAR Gen 2

Output

PCEP Detail Output

[Table 66: Output fields: PCEP detail](#) 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 66: Output fields: PCEP detail

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

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
7705 SAR Gen 2

6.11 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.

Values1 to 17407
- vc-id

The virtual circuit ID on the SDP ID to be cleared.

Values1 to 4294967295

Platforms

7705 SAR Gen 2

6.12 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

7705 SAR Gen 2

6.13 dhcp

dhcp

Syntax

dhcp

Context

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

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

Full Context

show router dhcp

show service id dhcp

Description

Commands in this context display DHCP information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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#
```

6.14 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 autoconfigure DHCP client information collected on the system.

Parameters

ip-int-name
Specifies the name of the interface, up to 32 characters.

statistics

Keyword to clear DHCP client statistics.

Platforms

7705 SAR Gen 2

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 information about the DHCP clients configured on the router.

Parameters

- ip-int-name*
Specifies the name of the interface, up to 32 characters.
- statistics**
Keyword to display collected statistics for the DHCP client.
- routes**
Keyword to display the routes received by the DHCP client.

Platforms

7705 SAR Gen 2

Output

The following output is an example of DHCP client information, and [Table 67: Output fields: autoconfigure DHCP client](#) describes the output fields.

```
show router autoconfigure dhcp-client
=====
DHCP Client state
=====
Client IP address      : 10.1.1.100
Client MAC address     : 00:11:22:33:44:55
Server Identifier      : 10.1.1.1
Router IP address      : 10.1.1.100
```

```

Primary DNS           : 8.8.8.8
Secondary DNS        : 8.8.4.4
Tertiary DNS         : (Not Specified)
Lease acquired time  : 2023-02-20 14:30:00
Lease renew time     : 2023-02-20 16:30:00
Lease rebind time    : 2023-02-20 17:30:00
Lease end time       : 2023-02-20 18:30:00
DHCP RFC protocol state : bound
DHCP client user status : active
Description          : demo-DHCP-client
=====

```

Table 67: Output fields: *autoconfigure DHCP client*

Label	Description
Client IP address	The DHCP client IP address
Client MAC address	The DHCP client MAC address
Server Identifier	The DHCP server ID
Router IP address	The DHCP server IP address
Primary DNS	The primary DNS server
Secondary DNS	The secondary DNS server
Tertiary DNS	The tertiary DNS server
Lease acquired time	The time the DHCP lease was acquired
Lease renew time	The time the DHCP lease was last renewed
Lease rebind time	The time the DHCP lease was last rebound
Lease end time	The time the DHCP lease expires
DHCP RFC protocol state	The status of the of the DHCP RFC protocol
DHCP client user status	The status of the DHCP client
Description	The DHCP client description

dhcp-client

Syntax

dhcp-client interface *ip-int-name* offer

dhcp-client interface *ip-int-name* offer

dhcp-client interface *ip-int-name* offer

Context

[Tree] (tools>dump>router>autoconfigure dhcp-client)

Full Context

tools dump router autoconfigure dhcp-client

Description

This command displays DHCP client information.

Parameters

ip-int-name

Specifies the name of the interface, up to 32 characters.

offer

Keyword to display processed DHCP offer information.

raw

Keyword to display raw offer information.

config-apply-status

Keyword to display the DHCP client configuration status.

Platforms

7705 SAR Gen 2

dhcp-client

Syntax

dhcp-client interface *ip-int-name* **lease-renew**

dhcp-client interface *ip-int-name* **restart**

Context

[\[Tree\]](#) (tools>perform>router>autoconfigure dhcp-client)

Full Context

tools perform router autoconfigure dhcp-client

Description

This command triggers the DHCP client to request a lease renewal and restarts the DHCP client.

Parameters

ip-int-name

Specifies the name of the interface, up to 32 characters.

lease-renew

Keyword to request a lease renewal for the DHCP client.

restart

Keyword to restart the DHCP client.

Platforms

7705 SAR Gen 2

6.15 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

7705 SAR Gen 2

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			
=====					

6.16 dhcp6

dhcp6

Syntax
dhcp6

Context
[Tree] (show>service>id dhcp6)
[Tree] (show>system dhcp6)
[Tree] (show>router dhcp6)

Full Context
show service id dhcp6
show system dhcp6
show router dhcp6

Description
Commands in this context display DHCP6 related information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

dhcp6

Syntax

dhcp6

Context

[\[Tree\]](#) (tools>perform>router dhcp6)

Full Context

tools perform router dhcp6

Description

Commands in this context configure tools DHCPv6 parameters.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

6.17 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

7705 SAR Gen 2

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

7705 SAR Gen 2

6.18 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

7705 SAR Gen 2

Output

LDP Discovery Output

[Table 68: Output fields: LDP discovery](#) describes the LDP discovery output fields.

Table 68: Output fields: LDP discovery

Label	Description
Interface Name	The name of the interface.

Label	Description
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.
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          Trying

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 AdjType	Local Addr Peer Addr	State
ip-10.10.1.1 link	10.20.1.1:0 10.20.1.2:0	Estab

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#		

6.19 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
7705 SAR Gen 2

dist-cpu-protection

Syntax
dist-cpu-protection

Context
[Tree] (tools>dump>security dist-cpu-protection)
[Tree] (tools>perform>security dist-cpu-protection)

Full Context

tools dump security dist-cpu-protection
tools perform 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

7705 SAR Gen 2

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

7705 SAR Gen 2

6.20 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

7705 SAR Gen 2

Output

The following output is an example of diversity association information, and [Table 69: Output fields: PCE associations diversity](#) 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                Association Source : 192.168.213.59
Diversity Type        : link              Disjointness Type  : loose
Disjoint Reference    : False
=====
```

Table 69: Output fields: PCE associations diversity

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

6.21 dns

dns

Syntax

dns

Context

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

Full Context

show router dns

Description

This command displays DNS information.

Platforms

7705 SAR Gen 2

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
```

6.22 domain

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

7705 SAR Gen 2

6.23 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

7705 SAR Gen 2

6.24 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

7705 SAR Gen 2

6.25 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

7705 SAR Gen 2

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#		

6.26 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

7705 SAR Gen 2

Output

The following output is an example of dscp-table information, and [Table 70: Output fields: QoS DHCP table](#) 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 70: Output fields: QoS DHCP table

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.

Label	Description
TOS (hex)	Displays the type of service in hex format.

6.27 dump

dump

Syntax
dump

Context
[\[Tree\]](#) (tools dump)

Full Context
tools dump

Description
Commands in this context display troubleshooting information.

Platforms
7705 SAR Gen 2

6.28 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

7705 SAR Gen 2

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

7705 SAR Gen 2

6.29 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

7705 SAR Gen 2

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

7705 SAR Gen 2

6.30 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

7705 SAR Gen 2

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: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

7705 SAR Gen 2

7 e Commands

7.1 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
7705 SAR Gen 2

Output
The following output is an example of ECMP settings information, and [Table 71: Output fields: ECMP](#) 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
            Rtes
-----
1             Base             True      32             True
```

=====

Table 71: Output fields: ECMP

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

7.2 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	aps-group-id [.channel] aps keyword <i>group-id</i> 1 to 128
eth-sat-id	esat-id [/slot/[u]port] esat keyword

	<i>id</i>	1 to 20
	<i>u</i>	keyword for up-link port
tdm-sat-id	tsat-id [/ <i>slot</i> [/ u] <i>port. channel</i>]	
	tsat	keyword
	<i>id</i>	1 to 20
	u	keyword for up-link port
pxc-id	pxc-id.sub-port	
	pxc	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a to b

family
Specifies the address family.
Values ipv4, ipv6

Platforms
7705 SAR Gen 2

7.3 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

7705 SAR Gen 2

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 72: Output fields: [service egress](#) describes show service egress label output fields.

Table 72: Output fields: service egress

Label	Description
Svc Id	The ID that identifies a service.
Sdp Id	The ID that identifies an SDP.
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.

7.4 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

7705 SAR Gen 2

7.5 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: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

7705 SAR Gen 2

7.6 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

7705 SAR Gen 2

Output

The following output is an example of encryption key group information, and [Table 73: Output fields: encryption key group](#) 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 73: Output fields: encryption key group

Label	Description
Encryption Keygroup Configuration Detail	
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
Security Associations	
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
Encryption Keygroup Forwarded Statistics	
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
Encryption Keygroup Outbound Discarded Statistics (Pkts)	
Total Discard	The total number of outbound packets discarded by the key group

Label	Description
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)
Encryption Keygroup Inbound Discarded Statistics (Pkts)	
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
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)
SDP Keygroup Association Table	
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
VPRN Keygroup Association Table	

Label	Description
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

7705 SAR Gen 2

7.7 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

7705 SAR Gen 2

Output

The following output is an example of service endpoint information and [Table 74: Output fields: service endpoint](#) describes the output fields.

Output Example

```
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.
=====

show service id 505 endpoint "access"

=====
Service 505 endpoints
=====
Endpoint name       : access
Description         : (Not Specified)
Creation Origin     : manual
Revert time        : 0
Act Hold Delay     : 0
Standby Signaling Master : false
Standby Signaling Slave : false
Tx Active          : lag-1:505
Tx Active Up Time   : 0d 00:00:00
Revert Time Count Down : never
Tx Active Change Count : 0
Last Tx Active Change : 09/02/2024 13:25:46
-----
Members
-----
SAP      : lag-1:505                Oper Status: Up
SAP      : lag-1:506                Oper Status: Down
=====

```

Table 74: Output fields: service endpoint

Label	Description
Service <ID> endpoints	
Endpoint name	Displays the endpoint name
Description	Displays the endpoint description
Creation Origin	Displays the creation origin method
Revert time	Displays the revert time value
Act Hold Delay	Displays the active hold delay value
Standby Signaling Master	Displays the standby signaling master status
Standby Signaling Slave	Displays the standby signaling slave status
Tx Active	Displays the active SAP ID
Tx Active Up Time	Displays the active up time
Revert Time Count Down	Displays the revert time countdown status
Tx Active Change Count	Displays the number of active changes

Label	Description
Last Tx Active Change	Displays the date and time of last active change
Members	
SAP	Displays the SAP ID
Oper Status	Displays the operational status

7.8 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
7705 SAR Gen 2

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

7705 SAR Gen 2

7.9 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

7705 SAR Gen 2

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
=====
```

Epip	SvcId	Oper	ISID	Admin	Oper
100		100		Down	Down
Number of Entries : 1					
*A:term17>show>service>id#					

7.10 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 Epip service(s). The information displayed shows the egress port for traffic traveling from SAP to egress SDP or SAP.

This command will support Epip 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.

Values1 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

7705 SAR Gen 2

7.11 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

7705 SAR Gen 2

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

```

7.12 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

7705 SAR Gen 2

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
=====
```

7.13 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

7705 SAR Gen 2

7.14 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

7705 SAR Gen 2

7.15 ethernet

ethernet

Syntax

ethernet

Context

[\[Tree\]](#) (clear>port ethernet)

Full Context

clear port ethernet

Description

Commands in this context clear Ethernet port statistics.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

7.16 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

7705 SAR Gen 2

7.17 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

7705 SAR Gen 2

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.

7.18 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, mcpaht, mc_redundancy, mgmt_core, mirror, mld, mld_snooping, mpls, mpls_tp, mpls_lmgr, mrp, msdp, nat, nge, ntp, oam, open_flow, ospf, pcap, pcep, pfcg, 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

7705 SAR Gen 2

Output

The following output is an example of event control information.

Table 75: Output fields: event control describes the output fields for the event control.

Output Example

A:gal171# show log event-control

=====

Log Events

=====

Application		P	g/s	Logged	Dropped				
ID#	Event Name								

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			
CFLWD:									
	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 vRtrIgmpIfRxQueryVerMismatch WA gen 0 0
2002 vRtrIgmpIfCModeRxQueryMismatch 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 vRtrIsisDatabaseOverload WA gen 0 0
2002 vRtrIsisManualAddressDrops WA gen 0 0
2003 vRtrIsisCorruptedLSPDetected WA gen 0 0
2004 vRtrIsisMaxSeqExceedAttempt WA gen 0 0
2005 vRtrIsisIDLenMismatch WA gen 0 0
2006 vRtrIsisMaxAreaAdrsMismatch 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 75: Output fields: event control

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. 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.

Label	Description
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).

7.19 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

7705 SAR Gen 2

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

7705 SAR Gen 2

7.20 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

7705 SAR Gen 2

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
  tmnxOamPingCtlOwnerIndex
  tmnxOamPingCtlTestIndex
  tmnxOamPingCtlTgtAddrType
  tmnxOamPingCtlTgtAddress
```

```
tmnx0amPingResultsTestRunIndex
tmnx0amPingResultsOperStatus
tmnx0amPingResultsMinRtt
tmnx0amPingResultsMaxRtt
tmnx0amPingResultsAverageRtt
tmnx0amPingResultsRttSumOfSquares
tmnx0amPingResultsRtt0FSumSquares
tmnx0amPingResultsMtuResponseSize
tmnx0amPingResultsSvcPing
tmnx0amPingResultsProbeResponses
tmnx0amPingResultsSentProbes
tmnx0amPingResultsLastGoodProbe
tmnx0amPingCtlTestMode
tmnx0amPingHistoryIndex
=====
```

7.21 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

7705 SAR Gen 2

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
7705 SAR Gen 2

Output
The following output is an example of consumed EVPN resources information and, [Table 76: Output fields: EVPN usage](#) 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 76: Output fields: EVPN usage

Label	Description
MPLS-TEP	Specifies the number of MPLS tunnel endpoints (TEPs)

Label	Description
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
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
```

7.22 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
7705 SAR Gen 2

Output
The following command displays an example of all the TEPs for which the peer advertised a Layer 2 extended community and [Table 77: Output fields: EVPN Layer 2 TEP](#) 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 77: Output fields: EVPN Layer 2 TEP

Label	Description
EVPN P2MP L2 Attributes	
TEP Address	The TEP address

Label	Description
Oper State	The operational state
Oper Flags	The operational flags
Number of entries	The total number of matching entries

7.23 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

7705 SAR Gen 2

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]
evpn-mpls fxc [sap sap-id]
```

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 multihoming) and **es-bmac** (for PBB-EVPN multihoming) 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

Keyword that displays detailed information.
- fxc

Keyword that displays Flexible Cross Connect (FXC) information.
- sap-id

Specifies the port ID portion of the SAP definition.

Values	
null	port-id bundle-id bpgrp-id lag-id aps-id eth-sat-id
dot1q	port-id bundle-id bpgrp-id lag-id aps-id pw-id eth-sat-id:[qtag1] cp-conn-prof-id]
qinq	port-id bundle-id bpgrp-id lag-id pw-id eth-sat-id:[qtag1 cp-conn-prof-id].[qtag2 cp-conn-prof-id]
cp	keyword
conn-prof-id	1 to 8000
port-id	slot/mda/port[.channel]
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-string

	lag	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	pw-id	
	pw	keyword
	<i>id</i>	1 to 32767
qtag1	null 0 to 4094	
qtag2	* null 0 to 4094	
tunnel-id	tunnel-id.private <i>public:tag</i>	
	tunnel	keyword
	<i>id</i>	1 to 64
	<i>tag</i>	0 to 4094
eth-sat-id	esat-id/slot/port	
	esat	keyword
	<i>id</i>	1 to 40
pxc-id	pxc-id.sub-port	
	pxc	keyword
	<i>id</i>	1 to 256
	<i>sub-port</i>	a, b

Platforms

7705 SAR Gen 2

Output

The following output is an example of EVPN MPLS information, and [Table 78: Output fields: service EVPN-MPLS](#) describes the output fields.

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
=====
```

```
show service id 100 evpn-mpls
```

```
=====
BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address              Egr Label                Num Saps    Last Change
                        Transport:Tnl-id
-----
10.20.1.2               524285                   3           08/15/2023 23:18:50
                        ldp:65543
10.20.1.2               524286                   2           08/15/2023 23:18:50
                        ldp:65543
10.20.1.3               524285                   1           08/15/2023 23:18:50
                        ldp:50000
-----
Number of entries : 3
=====

BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId                Num Saps    Last Change
-----
00:00:11:11:00:00:11:11:11 1           08/15/2023 23:18:50
00:00:11:11:00:00:11:11:22 1           08/15/2023 23:18:50
-----
Number of entries : 2
```

```
show service id 505 evpn-mpls
```

```
=====
BGP EVPN-MPLS Dest (Instance 1)
=====
```

TEP Address	Egr Label Transport:Tnl-id	Num Saps	Last Change
2001:db8::4	524271 ldp:65538	1	09/02/2024 15:23:38
2001:db8::4	524272 ldp:65538	1	09/02/2024 14:58:23

```
-----
Number of entries : 2
=====
```

```
=====
BGP EVPN-MPLS Dest (Instance 2)
=====
```

TEP Address	Egr Label Transport:Tnl-id	Num Saps	Last Change
No Matching Entries			

```
=====
```

```
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
```

Eth SegId	Num Saps Last Change
No Matching Entries	

```
=====
```

```
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
```

Eth SegId	Num Saps Last Change
No Matching Entries	

```
=====
```

```
show service id 505 evpn-mpls fxc
```

```
=====
FXC SAP Connections (Instance 1)
=====
```

Dest Identifier Transport:Tnl-id	Sap (Normalized Tags)	Last Change
mpls-1:2001:db8::4:524271 ldp:65538	lag-1:506 (556.556)	09/02/2024 16:59:30
mpls-1:2001:db8::4:524272 ldp:65538	lag-1:505 (555)	09/02/2024 16:59:30

```
-----
Number of Entries : 2
=====
```

The following table describes the EVPN-MPLS output fields.

Table 78: Output fields: service EVPN-MPLS

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
FXC SAP Connections	
Dest Identifier	Displays the destination ID
Sap (Normalized Tags)	Displays the SAP ID
Last Change	Displays the date and time of the last change
Transport:Tnl-id	Displays the transport tunnel ID
Number of Entries	Displays the total number of entries

7.24 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

7705 SAR Gen 2

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
=====
```

7.25 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

7705 SAR Gen 2

export

Syntax

export

Context

[\[Tree\]](#) (clear>router>ospf export)

[\[Tree\]](#) (clear>router>ospf3 export)

Full Context

clear router ospf export

clear router ospf3 export

Description

This command re-evaluates all effective export policies.

Platforms

7705 SAR Gen 2

export

Syntax

export

Context

[\[Tree\]](#) (clear>router>rip export)

Full Context

clear router rip export

Description

This command re-evaluates RIP export policies.

Platforms

7705 SAR Gen 2

export

Syntax

export

Context

[\[Tree\]](#) (clear>router>ripng export)

Full Context

clear router ripng export

Description

This command re-evaluates RIPvng export policies.

Platforms

7705 SAR Gen 2

7.26 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

7705 SAR Gen 2

8 f Commands

8.1 failover

failover

Syntax

failover

Context

[Tree] (tools>perform>router>dhcp>server>pool failover)

[Tree] (tools>perform>router>dhcp>server failover)

[Tree] (tools>perform>router>dhcp6>server>pool failover)

[Tree] (tools>perform>router>dhcp6>server failover)

Full Context

tools perform router dhcp local-dhcp-server pool failover

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

Description

Commands in this context perform local DHCP or DHCP6 server failover tasks.

Platforms

7705 SAR Gen 2

8.2 failover-pool-stats

failover-pool-stats

Syntax

failover-pool-stats [*pool-name*]

Context

[Tree] (show>router>dhcp>local-dhcp-server failover-pool-stats)
[Tree] (show>router>dhcp6>local-dhcp-server failover-pool-stats)

Full Context

show router dhcp local-dhcp-server failover-pool-stats
show router dhcp6 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

7705 SAR Gen 2

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 79: Output fields: failover pool statistics](#) describes failover pool statistics output fields.

Table 79: Output fields: failover pool statistics

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 local 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>dhcp>server failover-pool-stats)

[\[Tree\]](#) (clear>router>dhcp6>server failover-pool-stats)

Full Context

clear router dhcp local-dhcp-server failover-pool-stats

clear router dhcp6 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

7705 SAR Gen 2

8.3 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
7705 SAR Gen 2

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 80: Output fields: failover server statistics describes failover server stats fields.

Table 80: Output fields: failover server statistics

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 local 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.

8.4 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.

endpoint-name

Specifies an endpoint name up to 32 characters in length.

Platforms

7705 SAR Gen 2

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
      Age
-----
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
      Age
-----
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=0am 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    Last Change
      Age
-----
1         00:ca:ca:ba:ca:01  eES:                 Evpn    06/29/15 23:21:34
```

1	00:ca:ca:ba:ca:06	01:00:00:00:00:71:00:00:00:01	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=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 200 fdb detail
```

Output Example

=====					
Forwarding Database, Service 200					
=====					
ServId	MAC	Source-Identifier	Type	Last	Change
	Transport:Tnl-Id		Age		

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		Age		

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=Oam 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:f4:00:00 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:01 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:02 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:03 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:04 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:05 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:06 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:07 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:f4:00:08 b-sdp:100:2000      2000        00:f4:f4:f4:f4:f4 L/0
00:f4: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 81: Output fields: service ID FDB describes service FDB output fields.

Table 81: Output fields: service ID FDB

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.

Label	Description
	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] |  
vxlان-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.

Values 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.

Values 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

7705 SAR Gen 2

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

7705 SAR Gen 2

8.5 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

7705 SAR Gen 2

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
OAM MAC Count    : 0
Host MAC Count   : 0
Spb Count        : 0
BGP EVPN Count   : 0
EVPN Dup Det Cnt : 0
Remote Age       : 900
High Watermark   : 95%
Mac Learning     : Enabled
Mac Aging        : Enabled
Mac Subnet Len   : 48
Sel Learned FDB  : Disabled

Static Count      : 0
DHCP MAC Count   : 0
Intf MAC Count   : 0
Cond MAC Count   : 0
EVPN Static Cnt  : 0
Local Age        : 300
Low Watermark    : 90%
Discard Unknown  : Disabled
Relearn Only     : False

-----
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 82: Output fields: FDB information describes show FDB-Info command output.

Table 82: Output fields: FDB information

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 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.

Label	Description
	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.
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.

Label	Description
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> <p>P — Indicates the MAC is protected by the MAC protection feature.</p> <p>Static — Statically configured.</p>
Last Change	Indicates the time of the most recent state changes.

Label	Description
Sel Learned FDB	Displays the administrative state of the selective learned FDB feature associated with this service.

8.6 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

7705 SAR Gen 2

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
-----
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
-----
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 83: Output fields: FDB MAC describes the show FDB-MAC command output fields.

Table 83: Output fields: FDB MAC

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.

Label	Description
	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.

8.7 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

7705 SAR Gen 2

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#
```

8.8 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: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, tdmoip, cesopsn-cas, tdmoip-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

7705 SAR Gen 2

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
TunIfId: 73728 (OperState : up)
LSP ID : 0
LSP ID Acct. : 0
isIngressMttm : 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 84: Output fields: LDP FEC describes the LDP FEC parameters output fields.

Table 84: Output fields: LDP FEC

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.

8.9 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

7705 SAR Gen 2

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

7705 SAR Gen 2

8.10 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

7705 SAR Gen 2

Output

FEC Originate Output

Table 85: Output fields: FEC originate describes the FEC originate parameters output fields.

Table 85: Output fields: FEC originate

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 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#
```

8.11 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.

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



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

7705 SAR Gen 2

Output

The following output is an example of FIB information and [Table 86: Output fields: FIB](#) 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]                                Protocol
NextHop
-----
3ffe::100:100:100:6/128                    OSPF3
10.20.1.4 (Transport:RSVP LSP:1)
-----
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 86: Output fields: FIB

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

7705 SAR Gen 2

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
=====
```

8.12 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.

Values0 to 1048575
- family**

Specifies the IPv4 or IPv6 address FIB telemetry route or tunnel family.

Valuesipv4, ipv6
- ip-prefix/prefix-length**

Displays FIB telemetry route or tunnel 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

Platforms

7705 SAR Gen 2

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[If]/TnId           Weight          GrpId PriActiv
Pushed Labels
Backup NextHop[If]/TnId
Pushed Labels
-----
30044                               RIB-API
1.2.3.3                             1              2      Yes    02/07/2020 23:44:51
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 [If/TnId]                  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/TnlId]                                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                          TnlId      TnlInst
NextHop [If/TnlId]                       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                          TnlId      TnlInst
NextHop [If/TnlId]                       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 87: Output fields: FIB telemetry

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

Label	Description
Primary NextHop[If/TnId]	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[If/TnId]	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"> • b — backup • i — indirect • l — LFA
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 [If/TnId]	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"> • a — active • b — backup • l — LFA
Dest Prefix	The destination IP prefix of the FIB tunnel entry
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

Label	Description
TnInst	The tunnel instance of the type indicated by protocol
Number of Entries	The total number of displayed tunnels

8.13 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

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8.14 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

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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 88: 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

Label	Description
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

8.15 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

```
7705 SAR Gen 2
```

8.16 filter

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

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filter

Syntax

filter

Context

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

Full Context

clear filter

Description

Commands in this context clear the filter entities.

Platforms

7705 SAR Gen 2

filter

Syntax

filter

Context

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

Full Context

tools dump filter

Description

Commands in this context dump filter information.

Platforms

7705 SAR Gen 2

filter

Syntax

filter

Context

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

Full Context

tools perform filter

Description

Commands in this context perform filter operations.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

8.17 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

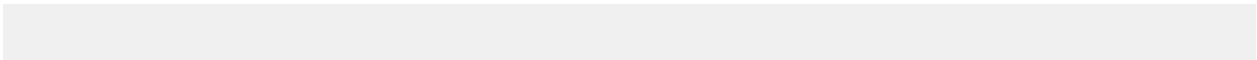
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Output

[Table 89: Output fields: filter ID](#) describes the output fields for a log file summary.

Table 89: Output fields: filter ID

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. 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

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Output

The following output is an example of event filter log information.

[Table 90: Output fields: event log filter detail](#) 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 90: Output fields: event log filter detail](#) describes the output fields for detailed event log filter information.

Table 90: Output fields: event log filter detail

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 91: Output fields: log filter match criteria](#) describes the output fields for log filter match criteria information.

Table 91: Output fields: log filter match criteria

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.

Label	Description
Application	The event log filter entry application match criterion.
Event Number	The event log filter entry application event ID match criterion.
Severity	<p>cleared — The log event filter entry application event severity cleared match criterion.</p> <p>indeterminate — The log event filter entry application event severity indeterminate match criterion.</p> <p>critical — The log event filter entry application event severity critical match criterion.</p> <p>major — The log event filter entry application event severity cleared match criterion.</p> <p>minor — The log event filter entry application event severity minor match criterion.</p> <p>warning — The log event filter entry application event severity warning match criterion.</p>
Subject	Displays the event log filter entry application event ID subject string match criterion.
Router	Displays the event log filter entry application event ID router <i>router-instance</i> string match criterion.
Operator	<p>There is an operator field for each match criteria: application, event number, severity, and subject.</p> <p>equal — Matches when equal to the match criterion.</p> <p>greaterThan — Matches when greater than the match criterion.</p> <p>greaterThanOrEqualTo — Matches when greater than or equal to the match criterion.</p> <p>lessThan — Matches when less than the match criterion.</p> <p>lessThanOrEqualTo — Matches when less than or equal to the match criterion.</p> <p>notEqual — Matches when not equal to the match criterion.</p> <p>off — No operator specified for the match criterion.</p>

8.18 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

7705 SAR Gen 2

8.19 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

7705 SAR Gen 2

Output

The following output is an example of flexible algorithm information, and [Table 92: Output fields: IS-IS flexible algorithm](#) 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 92: Output fields: IS-IS flexible algorithm

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

7705 SAR Gen 2

Output

The following output is an example of flexible algorithm information, and [Table 93: Output fields: OSPF flexible algorithm](#) 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 93: Output fields: OSPF flexible algorithm

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.

8.20 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

7705 SAR Gen 2

Output

The following output is an example of FAD information, and [Table 94: Output fields: FAD](#) 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 94: Output fields: FAD

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

8.21 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

7705 SAR Gen 2

8.22 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

7705 SAR Gen 2

8.23 force

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

7705 SAR Gen 2

8.24 force-partner-down

force-partner-down

Syntax

force-partner-down

Context

- [Tree] (tools>perform>router>dhcp>server>pool>failover force-partner-down)
- [Tree] (tools>perform>router>dhcp6>server>pool>failover force-partner-down)
- [Tree] (tools>perform>router>dhcp6>server>failover force-partner-down)
- [Tree] (tools>perform>router>dhcp>server>failover force-partner-down)

Full Context

```
tools perform router dhcp local-dhcp-server pool failover force-partner-down
tools perform router dhcp6 local-dhcp-server pool failover force-partner-down
tools perform router dhcp6 local-dhcp-server failover force-partner-down
tools perform router dhcp local-dhcp-server 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

7705 SAR Gen 2

8.25 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

7705 SAR Gen 2

8.26 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 7705 SAR Gen 2 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

7705 SAR Gen 2

8.27 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

7705 SAR Gen 2

8.28 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

8.29 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

7705 SAR Gen 2

Output

[Table 95: Output fields: MPLS forwarding policy](#) describes MPLS forward-policy output fields.

Table 95: Output fields: MPLS forwarding policy

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.

Label	Description
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: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

7705 SAR Gen 2

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

7705 SAR Gen 2

8.30 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

7705 SAR Gen 2

8.31 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
```

8.32 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

7705 SAR Gen 2

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                                     Protocol   Tunnel-ID
```

Lbl	NextHop	Intf/Tunnel		
10.20.1.3/32			LDP	-
262137	10.2.1.3	1/1/3:1		
10.20.1.3/32			RSVP	1
262133	10.2.1.3	1/1/3:1		
10.20.1.3/32			SR-ISIS-0	-
18602	10.2.1.3	1/1/3:1		
10.20.1.3/32			SR-OSPF-0	-
19102	10.2.1.3	1/1/3:1		

Total Entries : 4				

=====				
*A:Dut-B#				
*A:Dut-C# show router fp-tunnel-table 1				
=====				
Tunnel Table Display				
Legend:				
B - FRR Backup				
=====				
Destination Lbl	NextHop	Intf/Tunnel	Protocol	Tunnel-ID
10.0.0.1/32			SR-ISIS-0	-
20001	10.3.4.4	2/1/3:1		
20001/21005	10.2.3.2(B)	1/1/2		
10.20.1.2/32			SR-ISIS-0	-
21002	10.2.3.2	1/1/2		
21002/21005	10.3.4.4(B)	2/1/3:1		
10.20.1.4/32			SR-ISIS-0	-
21004	10.3.4.4	2/1/3:1		
21004/21005	10.2.3.2(B)	1/1/2		
10.20.1.5/32			SR-ISIS-0	-
21005	10.2.3.2	1/1/2		
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 Lbl	NextHop	Intf/Tunnel	Protocol	Tunnel-ID
10.1.3.1/32			SR	-
3	10.1.3.1	1/1/1		
10.2.3.2/32			SR	-
3	10.2.3.2	1/1/2:1		
10.3.5.5/32			SR	-
3	10.3.5.5	2/1/1		
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	SR-OSPF-0	-
10.20.1.2/32				
22022	10.2.3.2	1/1/2:2		
24022/25044	10.3.5.5(B)	2/1/1	SR-OSPF-0	-
10.20.1.4/32				
25044	10.3.5.5	2/1/1		
22044	10.2.3.2	1/1/2:2	SR-OSPF-0	-
10.20.1.5/32				
25055	10.3.5.5	2/1/1		
24055/22044	10.2.3.2(B)	1/1/2:2	SR-OSPF-0	-
10.20.1.6/32				
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 Lbl	NextHop	Intf/Tunnel	Protocol	Tunnel-ID

10.0.11.1/32			SR-OSPF-0	-
30004	10.0.26.2	1/1/3:1		
40004	10.0.36.3(B)	1/1/4:1		
10.0.22.2/32			SR-OSPF-0	-
30005	10.0.26.2	1/1/3:1		
20005/40004	10.0.36.3(B)	1/1/4:1		
10.0.26.2/32			SR	-
3	10.0.26.2	1/1/3:1		
50011/60001	10.0.56.5(B)	1/1/2:1		
10.0.26.2/32			SR	-
3	10.0.26.2	1/1/3:1		
20005/40004	10.0.36.3(B)	1/1/4:1		
10.0.33.3/32			SR-OSPF-0	-
40000	10.0.36.3	1/1/4:1		
30998	10.0.26.2(B)	1/1/3:1		
10.0.36.3/32			SR	-
3	10.0.36.3	1/1/4:1		
10.0.44.4/32			SR-OSPF-0	-
30001	10.0.26.2	1/1/3:1		
60001	10.0.56.5(B)	1/1/2:1		
10.0.55.5/32			SR-OSPF-0	-
60002	10.0.56.5	1/1/2:1		
30995	10.0.26.2(B)	1/1/3:1		
10.0.56.5/32			SR	-
3	10.0.56.5	1/1/2:1		
10.20.1.1/32			SR-OSPF-0	-
30010	10.0.26.2	1/1/3:1		
40010	10.0.36.3(B)	1/1/4:1		
10.20.1.2/32			SR-OSPF-0	-
30011	10.0.26.2	1/1/3:1		
50011/60001	10.0.56.5(B)	1/1/2:1		
10.20.1.3/32			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			SR-OSPF-0	-
30007	10.0.26.2	1/1/3:1		

```

60007          10.0.56.5(B)          1/1/2:1
10.20.1.5/32   SR-OSPF-0  -
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      Intf/Tunnel
-----
3ffe::100:b01/128 SR-OSPF3-0    -
20004
  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 SR-OSPF3-0    -
20005
  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 SR-OSPF3-0    -
20001
  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 SR-OSPF3-0    -
70002
  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"
3ffe::a14:104/128          LDP                -
524284
  fe80::114-"ip-3FFE::A0A:B03"
3ffe::a14:104/128          SR-ISIS-0          2/1/2
469491
  fe80::114-"ip-3FFE::A0A:B03"
3ffe::a14:105/128          LDP                -
524286
  fe80::55-"ip-3FFE::A0A:503"
3ffe::a14:105/128          SR-ISIS-0          2/1/1
484492
  fe80::55-"ip-3FFE::A0A:503"
3ffe::a14:106/128          LDP                -
524269
  fe80::114-"ip-3FFE::A0A:B03"
3ffe::a14:106/128          SR-ISIS-0          2/1/2
469493
  fe80::114-"ip-3FFE::A0A:B03"
3ffe::a14:106/128          SR-TE              655362
424493
  3ffe::a14:101
3ffe::a14:106/128          SR-TE              655363
424493
  3ffe::a14:101
fe80::21-"ip-3FFE::A0A:203"/128 SR                  SR      524289
3
  fe80::21-"ip-3FFE::A0A:203"
fe80::21-"ip-3FFE::A0A:203"/128 SR                  1/1/1
3                          524290
  fe80::21-"ip-3FFE::A0A:203"
fe80::32-"ip-3FFE::A0A:303"/128 SR                  1/1/1
3                          524293
  fe80::32-"ip-3FFE::A0A:303"
fe80::32-"ip-3FFE::A0A:303"/128 SR                  1/1/2
3                          524294
  fe80::32-"ip-3FFE::A0A:303"
fe80::55-"ip-3FFE::A0A:503"/128 SR                  1/1/2
3                          524300
  fe80::55-"ip-3FFE::A0A:503"
fe80::55-"ip-3FFE::A0A:503"/128 SR                  2/1/1
3                          524301
  fe80::55-"ip-3FFE::A0A:503"
fe80::114-"ip-3FFE::A0A:B03"/128 SR                  2/1/1
3                          524295
  fe80::114-"ip-3FFE::A0A:B03"
fe80::114-"ip-3FFE::A0A:B03"/128 SR                  2/1/2
3                          524296
  fe80::114-"ip-3FFE::A0A:B03"
fe80::122-"ip-3FFE::A0A:C03"/128 SR                  2/1/2
3                          524291
  fe80::122-"ip-3FFE::A0A:C03"
fe80::122-"ip-3FFE::A0A:C03"/128 SR                  lag-1
3                          524292
  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		
-----	-----	-----
=====	=====	=====

8.33 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

7705 SAR Gen 2

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 96: Output fields: DHCP server free addresses describes free addresses pool command output fields.

Table 96: Output fields: DHCP server free addresses

Field	Description
IP Address	The free IP addresses in the subnet
No of free addresses	The total number of free addresses in the subnet

8.34 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

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9 g Commands

9.1 gateway

gateway

Syntax

gateway *name*
gateway [*name name*] **tunnel** [*private-address-type private-address-type*]
gateway [*service service-id*]
gateway **tunnel** [*ip-address:port*]
gateway *name* **tunnel** *ip-address:port*
gateway *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

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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
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
=====

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
DHCPv4 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.

Values	<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

7705 SAR Gen 2

9.2 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.

- 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.

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.
 - 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

7705 SAR Gen 2

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 :
a764a7fa90099fb179266e2b400a225e3f0960a842fc55704e5b2eb0750bd6a2ca0ed8450b5b57b41f50
fab253961ee698bfc272a71bcc919420c603cef5e628
Privacy       : 94560a59230f63241fd596b920cfe2e703f60a8ea0c7c341a913f8d3a46f2256
SNMP Engine ID : 0000197f0000b65dff000000
```

9.3 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

7705 SAR Gen 2

9.4 group

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

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Output

The following output is an example of IGMP group information. [Table 97: Output fields: IGMP group](#) 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 97: Output fields: IGMP group

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 [*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

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Output

The following outputs are example of BGP group information, and [Table 98: Output fields: standard and detailed group](#) describes the output fields.

Output Example

```
*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

```
*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                 Keep Alive     : 30
Cluster Id     : None               Client Reflect : Enabled
NLRI           : Unicast            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 98: Output fields: standard and detailed group

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

Label	Description
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 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

Label	Description
	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
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 *[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

7705 SAR Gen 2

Output

The following output is an example of MLD group information. [Table 99: Output fields: MLD group](#) 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 99: Output fields: MLD group

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 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

7705 SAR Gen 2

Output

The following output is an example of PIM group information. [Table 100: Output fields: PIM group](#) 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.Oifs
Source Address          RP              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.Oifs
Source Address          RP              State  Inc Intf(S)
-----
ff04:db8:224:100:0:0   (*,G)          2001:db8:110:100:1*  vprn_itf_C_11* 2
*
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)          2001:db8:110:100:1*  vprn_itf_C_11* 2
*
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)          2001:db8:110:100:1*  vprn_itf_C_11* 2
*
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)          2001:db8:110:100:1*  vprn_itf_C_11* 2
*
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)          2001:db8:110:100:1*  vprn_itf_C_11* 2
*
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              Discarded Packets    : 0
Forwarded Octets   : 0              RPF Mismatches       : 0
Spt threshold      : 0 kbps          ECMP opt threshold   : 7
Admin bandwidth    : 1 kbps          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
Discarded Packets : 0
Forwarded Octets : 0
RPF Mismatches : 0
Spt threshold : 0 kbps
ECMP opt threshold : 7
Admin bandwidth : 1 kbps
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
Resolved By : rtable-u
Up Time : 0d 00:01:22

Up JP State : Joined
Up JP Expiry : 0d 00:00:00
Up JP Rpt : Pruned
Up JP Rpt Override : 0d 00:00:00
Up Stdbby JP State : Joined
Up Stdbby JP Expiry : 0d 00:00:12

Register State : No Info
Reg From Anycast RP: No

Rpf Neighbor : 10.10.2.3
Stdbby Rpf Neighbor : 10.10.1.2
Incoming Intf : ip-10.10.2.1
Stdbby 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 100: Output fields: PIM group

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 starg . The address of the Rendezvous Point (RP) display when the type is configured as starRP .
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 starg) or the source (if sg).
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 starstarp, 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.
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

Label	Description
	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	<p>The value used to delay triggered Join (S,G, rpt) messages to prevent implosions of triggered messages.</p> <p>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).</p>
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	<p>The number of multicast packets that matched this source group entry but were discarded.</p> <p>For (S,G) entries, if the traffic is getting forwarded on the SPT, the packets arriving from the RPT will be discarded.</p>
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.

Label	Description
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 [*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

7705 SAR Gen 2

Output

[Table 101: Output fields: RIP group](#) describes the standard command output fields for a RIP group.

Table 101: Output fields: RIP group

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.

Label	Description
	<p>Mcast — Specifies that RIPv2 formatted messages are sent to the multicast address.</p> <p>None — Specifies that no RIP messages are sent (silent listener).</p> <p>RIPv1 — Specifies that RIPv1 formatted messages are sent to the broadcast address.asp</p>
Recv Mode	<p>Both — Specifies that RIP updates in either version 1 or version 2 format will be accepted.</p> <p>None — Specifies that RIP updates will not be accepted.</p> <p>RIPv1 — Specifies that RIP updates in version 1 format only will be accepted.</p> <p>RIPv2 — Specifies that RIP updates in version 2 format only will be accepted.</p>
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
-----
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

7705 SAR Gen 2

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
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
                                     Flush Timer   : 5

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

7705 SAR Gen 2

9.5 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

7705 SAR Gen 2

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
7705 SAR Gen 2

9.6 group-interface

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	<i>service-id</i> : 1 to 2148278386
	<i>svc-name</i> : Up to 64 characters

ip-int-name
Specifies the IP interface name, up to 32 characters.

Platforms
7705 SAR Gen 2

9.7 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

```
7705 SAR Gen 2
```

Output

The following output is an example of system gRPC information.
[Table 102: Output fields: system gRPC](#) 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 102: Output fields: system gRPC

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
7705 SAR Gen 2

9.8 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
7705 SAR Gen 2

9.9 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

7705 SAR Gen 2

9.10 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

7705 SAR Gen 2

gsmp

Syntax

gsmp

Context

[\[Tree\]](#) (clear>service>id gsmp)

Full Context

clear service id gsmp

Description

Commands in this context clear GSMP statistics.

Platforms

7705 SAR Gen 2

10 h Commands

10.1 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

7705 SAR Gen 2

Output

The following output is an example of handler information.

Table 103: Output fields: handler describes handler output fields.

Output Example

```
A:node-2>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:node-2# 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 103: Output fields: handler

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.
Handler Action-List Entry	
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
Handler Action-List Entry Execution Statistics	
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 show>system>script-control 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

7705 SAR Gen 2

10.2 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

7705 SAR Gen 2

10.3 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

7705 SAR Gen 2

10.4 history

history

Syntax

history

Context

[\[Tree\]](#) (tools>dump>system>nsp-proxy history)

Full Context

tools dump system nsp-proxy history

Description

This command displays system NSP proxy history information.

Platforms

7705 SAR Gen 2

10.5 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

7705 SAR Gen 2

10.6 host-tracking

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

7705 SAR Gen 2

10.7 hostname

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

7705 SAR Gen 2

Output

IS-IS Hostname Output

Table 104: Output fields: IS-IS hostname describes output fields for IS-IS hostname output.

Table 104: Output fields: IS-IS hostname

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

7705 SAR Gen 2

Output

The following output is an example of OSPF hostname database information. [Table 105: Output fields: hostname](#) displays field descriptions.

Table 105: Output fields: hostname

Label	Description
Nbr Rtr Id	The OSPF ID.
hostname	The OSPF hostname.

Label	Description
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
```

10.8 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

7705 SAR Gen 2

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
=====
```

10.9 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

7705 SAR Gen 2

11 i Commands

11.1 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
7705 SAR Gen 2

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#			

11.2 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
7705 SAR Gen 2

Output
The following output is an example of router ICMP statistics, and [Table 106: Output fields: ICMP](#) 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 106: Output fields: ICMP

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 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

7705 SAR Gen 2

11.3 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

7705 SAR Gen 2

11.4 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: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

7705 SAR Gen 2

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#
```

11.5 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

7705 SAR Gen 2

Output

The following output is an example of router ICMPv6 statistics, and [Table 107: Output fields: ICMPv6](#) 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 107: Output fields: ICMPv6

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
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

7705 SAR Gen 2

11.6 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

7705 SAR Gen 2

11.7 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

7705 SAR Gen 2

id

Syntax

id service-id

Context

[\[Tree\]](#) (clear>service>statistics id)

[\[Tree\]](#) (clear>service id)

Full Context

clear service statistics id

clear service 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

11.8 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

7705 SAR Gen 2

11.9 igmp

igmp

Syntax

igmp

Context

[\[Tree\]](#) (clear>router igmp)

Full Context

clear router igmp

Description

Commands in this context clear and reset IGMP entities.

Platforms

7705 SAR Gen 2

igmp

Syntax

igmp

Context

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

Full Context

show router igmp

Description

Commands in this context display IGMP related information.

Platforms

7705 SAR Gen 2

11.10 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

7705 SAR Gen 2

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

7705 SAR Gen 2

11.11 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

7705 SAR Gen 2

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 IP-Address	Adm/Opr (v4/v6)	Type	Port/SapId PfxState
1001	ies-1001 192.168.3.30/24	Up/ (Up/Down)	IES	1/1/1:1001. 1001 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

7705 SAR Gen 2

11.12 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.

Values	esa-vm:	esa-id/vm-id
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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
=====

11.13 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

7705 SAR Gen 2

11.14 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.

Values1 to 2048
- association*

Lists the **ipsec-tunnel**, **ipsec-gw** and dynamic tunnel using the specified **ike-policy**.

Platforms

7705 SAR Gen 2

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#
```

11.15 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
7705 SAR Gen 2

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.

Values	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

Platforms

7705 SAR Gen 2

11.16 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

7705 SAR Gen 2

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
=====
```

11.17 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
	esa-id 1 to 16
	vm-id 1 to 4

Platforms

7705 SAR Gen 2

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
```

11.18 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

7705 SAR Gen 2

11.19 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:
	<ul style="list-style-type: none">as-num — 0 to 65535comm-val — 0 to 65535ext-comm — the extended community, defined as the following: type:{ ip-address:comm-val1 as-number1:comm-val2 as-number2:comm-val1} where:<ul style="list-style-type: none">as-number1 — 0 to 65535comm-val1 — 0 to 65535type — target, originip-address — a.b.c.dcomm-val2 — 0 to 4294967295as-number2 — 0 to 4294967295well-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

7705 SAR Gen 2

11.20 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

7705 SAR Gen 2

Output

The following output is an example of system information. [Table 108: Output fields: system information](#) describes the output fields.

Output example

```
A:admin@node-2# show system information

=====
System Information
=====
System Name           : note-2
System Type           : 7705 SAR-1
Chassis Topology      : Standalone
System Version        : B-0.0.I8066
System Contact        :
System Location       :
System Coordinates    :
System Up Time        : 12 days, 05:00:50.78 (hr:min:sec)
System Up Time (64-bit): 12 days, 05:00:50.78 (hr:min:sec)

Configuration Mode Cfg : classic
Configuration Mode Oper: classic
Last Mode Changed      : 2025/03/20 14:19:26 Duration: 0d 00:00:00

SNMP Port             : 161
```

```

SNMP Engine ID      : 0000197f000000013fe000000
SNMP Engine Boots   : 2
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      : N/A

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         : N/A
Last Booted Config File: N/A
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     : N/A
Time Last Saved       : N/A
Changes Since Last Save: Yes
User Last Modified    : admin
Time Last Modified    : 2025/03/24 17:12:44
Max Cfg/BOF Backup Rev : 5
Cfg-OK Script         : ftp://*:.*@192.168.*.*./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.*.*/*
Management IPv6 Addr   : 3000::*:.*/*
Primary DNS Server     : 10.*.*.1
Secondary DNS Server   : 10.*.*.2
Tertiary DNS Server    : N/A
DNS Domain             : *.*.*.net
DNS Resolve Preference : ipv4-only
DNSSEC AD Validation   : False
DNSSEC Response Control: drop
...

ICMP Vendor Enhancement: Disabled

System Reboot Required : No

Last Reboot Reason     : admin
  Admin Reboot User     : admin
  Admin Reboot Router   : management
  Admin Reboot Address   : 192.168.*.*
  Admin Reboot Time     : 2025/03/20 14:19:07 UTC
=====

```

Table 108: Output fields: system information

Label	Description
System Name	The configured system name
System Type	The system type

Label	Description
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.
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 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

Label	Description
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"> Mismatch — There is a mismatch between the primary and standby CPM. N/A — The standby CPM is not inserted or is offline, or indices are not persistent. OK — The standby CPM is present and synchronized.
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. Secondary — Indicates that the directory location for runtime image file was loaded from the secondary source. Tertiary — Indicates that the directory location for runtime image file was loaded from the tertiary source.
Config Source	Primary — Indicates that the directory location for configuration file was loaded from the primary source. Secondary — Indicates that the directory location for configuration file was loaded from the secondary source. Tertiary — Indicates that the directory location for configuration file was loaded from the tertiary source.
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

Label	Description
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	Yes — There are unsaved configuration file changes. No — There are no unsaved configuration file changes.
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	Successful/Failed — The results from the execution of the CLI script file specified in the Cfg-OK Script location. Not used — No CLI script file was executed.
Cfg-Fail Script	URL — The location and name of the CLI script file executed following a failed bootup configuration file execution. Not used — No CLI script file was executed.
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

Label	Description
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
Eth QinQ Untagged SAP	False — The new-qinq-untagged-sap flag is disabled. True — The new-qinq-untagged-sap 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.

Label	Description
	<ul style="list-style-type: none">admin – Administrative reboot (for example, admin reboot command) from any management interface (for example, CLI, SNMP, and so on)other – The system was rebooted for other unspecified reasons (for example, power cycle, system crash).
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

7705 SAR Gen 2

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

0

0

0

0

=====

=====

Event Handling System - Event Handler Statistics

=====

Handler					
my-handler-1		Total	Success	ErrNoEntry	AdmStatus
		0	0	0	0

Entry Id		Launch	MinDelay	ErrLaunch	ErrAdmSta

1		0	0	0	0

SUMMARY		0	0	0	0

=====

HANDLERS SUMMARY

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

7705 SAR Gen 2

11.21 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 $ingress-label1 \leq X \leq ingress-label2$ 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

7705 SAR Gen 2

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 109: Output fields: service ingress label describes show service ingress label output fields.

Table 109: Output fields: service ingress label

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

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

11.22 ingress-statistics

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

7705 SAR Gen 2

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

7705 SAR Gen 2

11.23 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of VRRP instance information.

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
=====
```

11.24 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

7705 SAR Gen 2

11.25 interface

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

7705 SAR Gen 2

Output

The following output is an example of IP interface information, and [Table 110: Output fields: service ID interface](#) 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:x  (eight 16-bit
                                      pieces)
                                      x: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
Protocols    : None
Oper State   : Down

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
Virt. If Index : 26
If Type       : IES
IES ID        : 88
Arp Timeout   : 14400
ICMP Mask Reply : True
```

```

Cflowd      : None

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                          Virt. If Index : 27
SAP Id      : 10/1/2:0
TOS Marking : Untrusted                   If Type        : IES
SNTP B.Cast : False                      IES ID         : 88
MAC Address  : Not configured.           Arp Timeout    : 14400
IP MTU       : 1500                      ICMP Mask Reply : True
Arp Populate : Disabled
Cflowd      : None

Proxy ARP Details
Proxy ARP   : Disabled                      Local Proxy ARP : Disabled

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
-----
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                               Virt. If Index : 2
Last Oper Chg: 10/08/2009 07:07:58           Global If Index : 329
SDP Id      : spoke-2000:1

Spoke-SDP Details
Admin State : Up                               Oper State      : Down
Hash Label  : Enabled
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                           Lease Populate   : 0
Gi-Addr     : Not configured                 Gi-Addr as Src Ip: Disabled
Action      : Keep                           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                           Lease Populate   : 0
Oper State  : Down                           Nbr Resolution   : Disabled
If-Id Option : None                           Remote Id        : Disabled
Src Addr    : Not configured

DHCP6 Server Details
Admin State : Down                           Max. Lease States: 8000

ICMP Details
Redirects   : Number - 100                    Time (seconds)   - 10
Unreachables : Number - 100                    Time (seconds)   - 10
TTL Expired  : Number - 100                    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 V4 Pkts        : 2
Rx V4 Help. Pkts  : 0
Rx V6 Pkts        : 1
Tx Pkts           : 0
Tx V4 Pkts        : 0
Tx V4 Discard Pk* : 0
Tx V6 Pkts        : 0
Tx V6 Discard Pk* : 0
Tx DBcast Dis. P* : 0
Mpls Rx Pkts      : 0
Mpls Tx Pkts      : 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
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
Servers           : 192.0.2.3
Gi-Addr           : 10.250.13.254
* = inferred gi-address from interface
Action            : Keep
Match CircId      : 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
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           : luidb-1
If-Id Option      : AsciiTuple
PD Mngd Route     : Enabled
Override SLAAC    : Disabled
Filter-id         : No
User-ident        : mac
Python policy     :
DHCP6 Snooping Details
Admin State       : Down
DHCP6 Proxy Details
Rx Bytes          : 817
Rx V4 Bytes       : 608
Rx V4 Help. Bytes : 0
Rx V6 Bytes       : 209
Tx Bytes          : 0
Tx V4 Bytes       : 0
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
Local Proxy ARP   : Enabled
Lease Populate    : 1
Gi-Addr as Src Ip : Enabled
IP address
Trusted           : Enabled
MAC from L2 Hdr   : Disabled
Radius Override   : False
Remote Id         : Disabled
PD Mngd Route NH  : ipv6

```

```

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          : lddb-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
User-DB           : N/A
Admin State        : Down
=====
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
Spoke Descr      : (Not Specified)
VC Type          : Ether
Admin Path MTU   : 0
Far End          : 10.2.2.2
Tunnel Far End   : n/a
Hash Label       : Disabled
Oper Hash Label  : Disabled
Type             : Spoke
VC Tag           : n/a
Oper Path MTU    : 1568
Delivery         : MPLS
LSP Types        : RSVP
Hash Lbl Sig Cap : Disabled
Admin State      : Up
Acct. Pol        : None
Ingress Label    : 131065
Ingr Mac Fltr-Id : n/a
Oper State       : Up
Collect Stats    : Disabled
Egress Label     : 131059
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 110: Output fields: service ID interface

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.

Label	Description
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 tools perform service id service-id interface ip-int-name ignore-sap port-state 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>
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.

Label	Description
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

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Output

The following output is an example of IGMP interface information. [Table 111: Output fields: IGMP interface](#) 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 111: Output fields: IGMP interface

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	The current operational state of IGMP protocol on the interface.

Label	Description
Oper Status	
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	<p>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.</p> <p>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.</p>
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.
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.

Label	Description
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 [{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

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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

7705 SAR Gen 2

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

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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: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

Keyword to display detailed IP interface information. For **dist-cpu-protection**, **detail** includes the adapted operational rate parameters in the CLI output. The adapted operational rate 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 include the adapted operational rate parameters in the CLI output. The adapted operational rate 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

Keyword to specify 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

Keyword to display summary IP interface information for the router.

exclude-services

Keyword to display IP interface information, excluding IP interfaces configured for customer services. Only core network IP interfaces are displayed.

eth-cfm

Keyword to display Ethernet CFM information.

mac

Keyword to display 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

Keyword to display packet statistics for an interface on the router.



Note:

The **show router interface statistics** command also shows the MPLS statistics that are displayed when using the **show router mpls interface statistics** command. This allows the user to see MPLS statistics from interfaces that are not added to MPLS, such as the network interfaces of a carrier. [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

Keyword to display the distributed CPU protection parameters and status at the interface level.

class

Displays whether to display accounting policy statistics for the source or destination class.

Values source-class, dest-class

index

Displays interface information for a specific an integer value for the accounting source or destination class index.

Values 1 to 255

description

Keyword to display all interfaces in all routing contexts.

global-if-index

Displays information for a specific global interface index value.

Values 1 to 262144

Platforms

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Output

Standard IP interface output — The following output is an example of standard IP interface information, and [Table 112: Output fields: IP interface](#) describes the fields.

Output example

```
A:node-2# 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.
```

Output example

```
A:node-2# 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
=====
```

Output example

```
A:node-2# show router interface "to101port1-1"
=====
Interface Table (Router: Base)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address          admin    subport     encap      ca        PfxState
MACSec              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
=====
```

Output example

```
A:node-2# 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
```

Output example

```
A:node-2# 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:node-2# 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
=====
```

Output example

```
A:node-2>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 112: Output fields: IP interface

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 or 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	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 113: Output fields: IP interface detail](#) describes the fields.

Output example

```
A:node-2# 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
Address Type   : Primary
IGP Inhibit   : Disabled
Broadcast Address : Host-ones
HoldUp-Time   : 0
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

```

Output example

```
A:node-2>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 Addr  : 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 Bytes         : 94024
Rx V4 Pkts        : N/A                  Rx V4 Bytes       : N/A
Rx V6 Pkts        : N/A                  Rx V6 Bytes       : N/A
Tx Pkts           : 1583                 Tx Bytes          : 153481
Tx V4 Pkts        : 1161                 Tx V4 Bytes       : 110788
Tx V4 Discard Pk*: 0                     Tx V4 Discard Byt*: 0
Tx V6 Pkts        : 422                  Tx V6 Bytes       : 42693
Tx V6 Discard Pk*: 0                     Tx V6 Discard Byt*: 0
Tx DBcast Dis. P*: 0                     Tx DBcast Dis. By*: 0
Mpls Rx Pkts      : 249                  Mpls Rx Bytes     : 24301
Mpls Tx Pkts      : 340                  Mpls Tx Bytes     : 32109
GRE Termination   : Disabled
Inter-AS selective ILM untrusted          : Disabled
Untrusted default forwarding              : forward

```

Table 113: Output fields: IP interface detail

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 or core IP interface

Label	Description
	Service — the IP interface is a service IP interface
SNTP B.cast	Displays if the broadcast-client 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 does not reply to a received ICMP mask request True — the IP interface does reply to a received ICMP mask request
Arp Populate	Displays whether ARP is enabled or disabled
Host Conn Verify	The host connectivity verification
LdpSyncTimer	The IGP/LDP sync timer value
uRPF Chk	Displays whether unicast RPF (uRPF) Check is enabled on this interface
uRPF Iv6 Chk	Displays whether unicast RPF (uRPF) Check IPv6 is enabled on this interface
PTP HW Assist	Displays whether the PTP Hardware Assist function is enabled on this interface
cflowd	Displays 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	Displays whether the inter-AS selective ILM untrusted function is enabled on this interface
Untrusted default forwarding	Displays whether the untrusted default forwarding function is enabled on this interface

Detailed IP interface output — The following output is an example of detailed IP interface information showing detailed link delay information, and [Table 114: Output fields: IP interface detail](#) output describes the output fields.

Output example

```
A:node-2# show router interface "system" detail

=====
Interface Table (Router: Base)
=====

-----
Interface
-----
If Name       : system
Admin State   : Up
Oper (v4/v6)  : Down/Down
Down Reason Code : noIfAddress
Down Reason V4  : noIfAddress
Down Reason V6  : ifProtoOperDown
Protocols     : ISIS

IP Address    : Not Assigned
-----

Details
-----
Description    : (Not Specified)
If Index       : 1
Virt. If Index : 1
Last Oper Chg  : 01/25/2024 10:36:39
Global If Index : 256
Lag Link Map Prof: none
MACSec         : N/A
Port Id        : system
TOS Marking    : Trusted
If Type        : Network
Egress Filter  : none
Ingress Filter : none
Ingr IPv6 Flt  : none
Network QoS Policy: 1
MAC Address    : 00:03:fe:00:00:00
Mac Accounting : Disabled
IPv6 DAD       : Enabled
IPv6 Nbr ReachTime: 30s
IPv6 stale time : 14400s
IPv6 Nbr Limit  : Disabled
IPv6 Nbr Threshold: Disabled
IPv6 Nbr Log Only : Disabled
ND Learn Unsoli*: None
ND Proactive Refr*: None
TCP MSS V4     : 0
TCP MSS V6     : 0
IP MTU         : (default)
IP Oper MTU    : 1500
ARP Populate    : Disabled
Cflowd (unicast): 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         : 0
Rx V4 Pkts      : N/A
Rx V4 Help. Pkts : 0
Rx V6 Pkts      : N/A
Tx Pkts         : 0
Tx V4 Pkts      : 0
Tx V4 Discard Pk*: 0
Tx V6 Pkts      : 0
Rx Bytes        : 0
Rx V4 Bytes     : N/A
Rx V4 Help. Bytes : 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 Pk*: 0
Tx DBcast Dis. P*: 0
Mpls Rx Pkts      : 0
Mpls Tx Pkts      : 0
GRE Termination   : Disabled
Inter-AS selective ILM untrusted : Disabled
Untrusted default forwarding : forward
OperDCpuProtPlcy : N/A
IP-Helper Address: Disabled
Ingress destination class lookup : Disabled

Link Delay Details
Operational Delay: Not specified
Static Delay      : Not specified
Link Measure Tmpl: Not specified

Delay selection   : static-preferred
Dynamic Delay     : Not specified

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
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 Exceeded     : Number - 100
Unreachables      : Number - 100
Time (seconds)    - 10
Time (seconds)    - 10
Time (seconds)    - 10
Time (seconds)    - 10
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)
Ing FP QGrp Inst : (none)
Egress Port QGrp : (none)
Egr Port QGrp Inst: (none)
=====
* indicates that the corresponding row element may have been truncated.

```

Table 114: Output fields: IP interface detail

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
Down Reason Code	The down reason code
Down Reason V4	The down reason for IPv4
Down Reason V6	The down reason for IPv6
Protocols	The protocols for the interface
IP Address	The IP address and subnet mask length of the IP interface Not Assigned — indicates no IP address has been assigned to the IP interface
Description	The description for the IP 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
Lag Link Map Prof	The LAG link map profile for the IP router interface
MACSec	The MACsec information for the IP router interface
Port Id	The port ID for the IP router interface
TOS Marking	Displays the ToS marking: <ul style="list-style-type: none"> Trusted – the ToS field is not remarked by egress network IP interfaces unless the egress network IP interface has the remark-trusted state set, in which case the egress network interface treats all VPRN and network IP interfaces as untrusted Untrusted – all egress network IP interfaces remark IP packets received on the network interface according to the egress marking definitions on each network interface
If Type	Displays the interface type: <ul style="list-style-type: none"> Network – the IP interface is a network or core IP interface

Label	Description
	<ul style="list-style-type: none"> Service – the IP interface is a service IP interface
Egress Filter	The egress filter policy
Ingress Filter	The ingress filter policy
Egr Ipv6 Flt	The egress IPv6 filter policy
Ingr IPv6 Flt	The ingress IPv6 filter policy
SNTP B.Cast	Displays if the broadcast-client global parameter is configured: <ul style="list-style-type: none"> True – the broadcast-client is enabled False – the broadcast-client is disabled
Network QoS Policy	The network QoS policy ID
MAC Address	The MAC address of the IP interface
Mac Accounting	The state of MAC accounting: <ul style="list-style-type: none"> Enabled – MAC accounting is enabled Disabled – MAC accounting is disabled
Ingress stats	The state of ingress statistics collection: <ul style="list-style-type: none"> Enabled – ingress statistics are being collected Disabled – ingress statistics are not being collected
IPv6 DAD	The state of IPv6 duplicate address detection (DAD) on the IP interface: <ul style="list-style-type: none"> Enabled – IPv6 DAD is enabled Disabled – IPv6 DAD is disabled
ARP Timeout	The ARP timeout for the interface, which is the time an ARP entry is maintained in the ARP cache without being refreshed
IPv6 Nbr ReachTime	The IPv6 neighbor reachable time
ARP Retry Timer	The ARP retry timer value
IPv6 stale time	The maximum interval in which to confirm if an IPv6 neighbor is reachable
ARP Limit	The state of the ARP limit on the IP interface: <ul style="list-style-type: none"> Enabled – the ARP limit is enabled Disabled – the ARP limit is disabled
IPv6 Nbr Limit	The state of the IPv6 neighbor limit on the IP interface: <ul style="list-style-type: none"> Enabled – the IPv6 neighbor limit is enabled

Label	Description
	<ul style="list-style-type: none"> Disabled – the IPv6 neighbor limit is disabled
ARP Threshold	<p>The state of the ARP threshold on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the ARP threshold is enabled Disabled – the ARP threshold is disabled
IPv6 Nbr Threshold	<p>The state of the IPv6 neighbor threshold on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the IPv6 neighbor threshold is enabled Disabled – the IPv6 neighbor threshold is disabled
ARP Limit Log On*	<p>The state of ARP limit log only configuration on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the ARP limit log only configuration is enabled Disabled – the ARP limit log only configuration is disabled
IPv6 Nbr Log Only	<p>The state of the IPv6 neighbor log only configuration on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the IPv6 neighbor log only configuration is enabled Disabled – the IPv6 neighbor log only configuration is disabled
ARP Learn Unsoli*	<p>The state of ARP learn unsolicited on the IP interface:</p> <ul style="list-style-type: none"> Enabled – ARP learn unsolicited is enabled Disabled – ARP learn unsolicited is disabled
ND Learn Unsolici*	Displays if neighbor discovery learn unsolicited is configured
ARP Proactive Re*	<p>The state of ARP proactive refresh on the IP interface:</p> <ul style="list-style-type: none"> Enabled – ARP proactive refresh is enabled Disabled – ARP proactive refresh is disabled
ND Proactive Refr*	Displays if neighbor proactive refresh is configured. When configured, neighbor proactive refresh helps keep the entries active by sending an ARP refresh 30 seconds before the timeout or by starting neighbor unreachable detection (NUD) when the stale time expires.
TCP MSS V4	The TCP maximum segment size (MSS) for TCP connections originated from the associated IPv4 interface
TCP MSS V6	The TCP MSS for TCP connections originated from the associated IPv6 interface
IP MTU	The IP maximum transmission unit (MTU) for the IP interface
IP Oper MTU	The IP oper MTU
ARP Populate	The state of ARP populate on the IP interface:

Label	Description
	<ul style="list-style-type: none"> Enabled – ARP populate is enabled Disabled – ARP populate is disabled
Cflowd (unicast)	<p>The type of cflowd unicast analysis that is applied to the interface:</p> <ul style="list-style-type: none"> 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
Cflowd (multicast)	The cflowd multicast configuration
LdpSyncTimer	The IGP LDP synchronized timer value
Strip-Label	<p>The state of strip label on the IP interface:</p> <ul style="list-style-type: none"> Enabled – strip label is enabled Disabled – strip label is disabled
LSR Load Balance	Displays if LSR load balancing occurs at the router interface level or system level of the interface. Configuration at the router interface level overrides the system level configuration.
EGR Load Balance	<p>Displays the address used in the LAG or ECMP hash on IP interfaces:</p> <ul style="list-style-type: none"> both – the source and destination addresses are both used destination – the destination address is used source – the source address is used
Vas If Type	<p>The value added service (VAS) interface type:</p> <ul style="list-style-type: none"> both – the type of VAS is both to and from the access and to and from the network access – the type of VAS is to and from the access network – the type of VAS is to and from the network
TEID Load Balance	<p>The state of TEID load balancing on the IP interface:</p> <ul style="list-style-type: none"> Enabled – TEID load balancing is enabled Disabled – TEID load balancing is disabled
SPI Load Balance	<p>The state of SPI load balancing on the IP interface:</p> <ul style="list-style-type: none"> Enabled – SPI load balancing is enabled Disabled – SPI load balancing is disabled
uRPF Chk	Displays whether unicast RPF (uRPF) check is enabled on this interface

Label	Description
uRPF Ipv6 Chk	Displays whether unicast RPF check IPv6 is enabled on this interface
uRPF Select VPRN	<p>The state of uRPF checks on incoming traffic on the interface:</p> <ul style="list-style-type: none"> • True – the router performs uRPF checks of incoming traffic on the network interface for the following: <ul style="list-style-type: none"> – packets associated with the global routing table (base router) context – packets associated with the VPRNs that have enabled the uRPF check • False – the router performs uRPF checks for all ingress traffic on the network interface (associated with the base router and all VPRNs) based on the IPv4 and IPv6 urpf-check command configuration options on the network interface
PTP HW Assist	Displays if the PTP hardware assist function is enabled on this interface
RX Pkts	The received packets
Rx Bytes	The received bytes
Rx V4 Pkts	The received IPv4 packets
Rx V4 Bytes	The received IPv4 bytes
Rx V4 Help. Pkts	The received IPv4 Helper packets
Rx V4 Help. Bytes	The received IPv4 Helper bytes
Tx Pkts	The transmitted packets
Tx Bytes	The transmitted bytes
Tx V4 Pkts	The transmitted IPv4 packets
Tx V4 Bytes	The transmitted IPv4 bytes
Tx V4 Discard Pk*	The transmitted IPv4 discarded packets
Tx V4 Discard Byt*	The transmitted IPv4 discarded packets
Tx V6 Pkts	The transmitted IPv6 packets
Tx V6 Bytes	The transmitted IPv6 bytes
Tx V6 Discard Pk*	The transmitted IPv6 discarded packets
Tx V6 Discard Byt*	The transmitted IPv6 discarded bytes
Tx DBcast Dis. P*	The transmitted DBcast discarded packets

Label	Description
Tx DBcast Dis. By*	The transmitted DBcast discarded bytes
Mpls Rx Pkts	The MPLS received packets
Mpls Rx Bytes	The MPLS received bytes
Mpls Tx Pkts	The MPLS transmitted packets
Mpls Tx Bytes	The MPLS transmitted bytes
GRE Termination	The state of GRE termination: <ul style="list-style-type: none"> Enabled – the termination of MPLS-over-GRE and IP-over-GRE packets on destination IP addresses from a user-defined subnet is enabled Disabled – the termination of MPLS-over-GRE and IP-over-GRE packets on the subnet of the interface is disabled
Inter-AS selective ILM untrusted	Displays if the inter-AS selective ILM untrusted function is enabled on this interface
Untrusted default forwarding	The untrusted default forwarding behavior on the interface: <ul style="list-style-type: none"> forward – the router checks labeled packets in the normal way against the table of programmed ILMs to decide if packets are dropped or forwarded in a GRT, a VRF, or a Layer 2 service context drop – all labeled packets received on the interface are automatically dropped
OperDCpuProtPcly	The distributed CPU protection policy
IP-Helper Address	The IPv4 address of the target UDP broadcast gateway
Ingress destination class lookup	The state of the ingress destination class lookup: <ul style="list-style-type: none"> Enabled – the router performs a destination class lookup Disabled – the router does not perform a destination class lookup
Link Delay Details	
Operational Delay	The operational delay on the IP interface
Delay selection	The delay selection for the IP interface
Static Delay	The static delay for the IP interface
Dynamic Delay	The dynamic delay for the IP interface
Link Measure Tmpl	The link measurement template
Proxy ARP Details	

Label	Description
Rem Proxy ARP	<p>The state of remote proxy ARP on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the remote proxy ARP is enabled. Remote proxy ARP is similar to proxy ARP. It allows the router to answer an ARP request on an interface for a subnet that is not provisioned on that interface. This allows the router to forward to the other subnet on behalf of the requester. Disabled – the remote proxy ARP is disabled
Local Proxy ARP	<p>The state of local proxy ARP on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the local proxy ARP is enabled. When local proxy ARP is enabled on an IP interface, the system responds to all ARP requests for IP addresses belonging to the subnet with its own MAC address, and thus becomes the forwarding point for all traffic between hosts in that subnet. Disabled – the local proxy ARP is disabled
Policies	Displays ARP policies for the IP interface
Proxy Neighbor Discovery Details	
Local Pxy ND	<p>The state of the local proxy neighbor discovery on the IP interface:</p> <ul style="list-style-type: none"> Enabled – the local proxy neighbor discovery is enabled. When enabled, the interface replies to neighbor solicitation requests when both the hosts are on the same subnet. In this case, ICMP redirects are disabled. Disabled – the local proxy neighbor discovery is disabled. When disabled, the interface does not reply to neighbor solicitation requests if both the hosts are on the same subnet.
Policies	The local proxy neighbor discovery policies for the IP interface
ICMP Details	
Redirects	The number of packet redirects
Unreachables	The number of packets that did not reach the destination
TTL Expired	The number of messages that exceeded the time to live (TTL) threshold
Parameter Problem	The number of packets with a parameter problem in the IP header
ICMP Mask Reply	The number of address mask replies
ICMPv6 Details	
Packet Too Big	The number of packets that were too big

Label	Description
Parameter Problem	The number of packets with a parameter problem in the IP header
Redirects	The number of packet redirects
Time Exceeded	The number of packets where the time was exceeded
Unreachables	The number of packets that did not reach the destination
IPCP Address Extension Details	
Peer IP Addr	The remote IP address to be assigned to the far end of the associated PPP/MLPPP link via IPCP extensions
Peer Pri DNS Addr	The 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	The 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)
Network Domains Associated	The network domain for the interface
Admin Groups	The administrative groups for the interface
Srlg Groups	The SRLG groups for the interface
QoS Queue-Group Redirection Details	
Ingress FP QGrp	The ingress FP queue group
Egress Port QGrp	The egress port queue group
Ing FP QGrp Inst	The ingress FP queue group instance
Egr Port QGrp Inst	The egress port queue group instance

Statistics IP interface output — The following output is an example of router IP interface statistics when **enable-interface-statistics** is enabled, and [Table 115: Output fields: statistics IP interface](#) describes the fields.

Output example

```
A:node-2# show router interface "to_ixia" statistics
=====
Interface Statistics
=====
If Name       : to_Ixia
Admin State   : Up                               Oper (v4/v6)   : Up/Up
Rx Pkts       : 6244                             Rx Bytes       : 599424
Rx V4 Pkts    : 3122                             Rx V4 Bytes    : 299712
Rx V6 Pkts    : 3122                             Rx V6 Bytes    : 299712
Tx Pkts       : 0                               Tx Bytes       : 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

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 115: Output fields: statistics IP interface

Label	Description
If Name	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 116: Output fields: summary IP interface](#) describes the fields.

Output example

```

A:node-2# show router interface summary
=====
Router Summary (Interfaces)
=====
Instance  Router Name          Interfaces  Admin-Up  Oper-Up
-----
1         Base                7          7         5
=====

```

Table 116: Output fields: summary IP interface

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
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 117: Output fields: interface global interface index](#) describes the fields.

Output example

```
A:node-2# show router interface global-if-index 1
=====
Interface Table (Router: Base)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address                               PfxState
-----
loop1               Up       Up/Down     Network  loopback
100.0.1.2/32                               n/a
-----
Interfaces : 1
=====

A:node-2# 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
-----
Details
-----
Description      : (Not Specified)
If Index         : 2
Last Oper Chg    : 03/15/2018 01:00:02
Lag Link Map Prof: none
Lag Per Link Hash
Class           : 1
Port Id         : loopback
TOS Marking     : Trusted
Egress Filter   : none
Egr IPv6 Flt    : none
SNTP B.Cast     : False
MAC Address     : d6:ce:ff:00:00:00
Ingress stats   : Disabled
TCP MSS V4      : 0
ARP Timeout     : 14400s
ARP Retry Timer : 5000ms
ARP Limit       : Disabled
ARP Threshold   : Disabled
ARP Limit Log On*: Disabled
ARP Learn Unsoli*: Disabled
ARP Proactive Re*: Disabled
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
Virt. If Index  : 2
Global If Index : 1
Weight          : 1
If Type         : Network
Ingress Filter  : none
Ingr IPv6 Flt   : none
Network QoS Policy: 1
Mac Accounting  : Disabled
IPv6 DAD        : Enabled
TCP MSS V6      : 0
IPv6 Nbr ReachTime: 30s
IPv6 stale time : 14400s
IPv6 Nbr Limit  : Disabled
IPv6 Nbr Threshold: Disabled
IPv6 Nbr Log Only : Disabled
ND Learn Unsolici*: None
ND Proactive Refr*: None
Cflowd (multicast): None
Strip-Label     : 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
OperDCpuProtPlcy   : N/A
Proxy ARP Details
Rem Proxy ARP      : Disabled
Policies           : 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

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
Time (seconds)     : 10
Time (seconds)     : 10
Time (seconds)     : 10
Time (seconds)     : 10
Time (seconds)     : 10
ICP 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)
Ing FP QGrp Inst   : (none)
Egress Port QGrp   : (none)
Egr Port QGrp Inst : (none)
=====
* indicates that the corresponding row element may have been truncated.

```

Table 117: Output fields: interface global interface index

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 or 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, and [Table 118: Output fields: distributed CPU protection policy](#) describes Distributed CPU Protection Policer output fields.

Output example

```
A:node-2# 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 118: Output fields: distributed CPU protection policy

Label	Description
Distributed CPU Protection Policy	The DCP policy assigned to the object
Policer-Name	The configured name of the static policer
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 XMAs).
Policer-State	The state of the policer with the following potential values: Exceed – the policer has been detected as nonconforming to the associated DCP policy parameters (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)

Label	Description
	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	<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 detail 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	The count of packets exceeding the policing parameters since the specific 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; the counter is 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 specific local-monitor

Label	Description
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.

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Output

LDP Interface Output

Table 119: Output fields: LDP interface describes the LDP interface output fields.

Table 119: Output fields: LDP interface

Label	Description
Interface	Specifies the interface associated with the LDP instance.

Label	Description
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  Hello Hold  KA  KA  Transport
Sub-Interface(s)  Adm/Opr  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  Hello Hold  KA  KA  Transport
Sub-Interface(s)  Adm/Opr  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
BFD 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 Factor     : 3
Keepalive Timeout     : 30                Last Modified        : 02/27/15 23:23:19
Transport Addr        : System
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.

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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.

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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.

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Output

The following output is an example of MPLS interface information.

[Table 120: Output fields: MPLS interface](#) describes MPLS interface output fields.

Table 120: Output fields: MPLS interface

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

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Output

The following output is an example of RSVP interface information.

[Table 121: Output fields: RSVP interface](#) describes RSVP interface output fields.

Table 121: Output fields: RSVP interface

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 %
Port Speed     : 100 Mbps
Total BW       : 1000 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 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
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of MLD interface information. [Table 122: Output fields: MLD interface](#) 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 122: Output fields: MLD interface

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.
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

7705 SAR Gen 2

Output

The following output is an example of a PIM interface configuration. [Table 123: Output fields: PIM interface](#) 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                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                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                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                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                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         : vrrp1_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 123: Output fields: PIM interface

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

Label	Description
OprGrp Active oper	The OperGroup operation (add, set, subtract) to the DR priority
Cfg OprGrp Priority	The configured OperGroup DR priority

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

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Output

The following output is an example of BFD interface information, and [Table 124: Output fields: BFD interface](#) 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 124: Output fields: BFD interface

Label	Description
TX Interval	Displays the interval, in milliseconds, between the transmitted BFD messages to maintain the session
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>icmp interface)
- [\[Tree\]](#) (show>router>icmp6 interface)

Full Context

show router icmp interface
show router icmp6 interface

Description

This command displays interface ICMP and ICMP6 statistics.

Parameters

interface-name
Only displays entries associated with the specified IP interface name.

Platforms

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Output

The following output is an example of ICMPv6 interface statistics, and [Table 125: Output fields: ICMP6 interface](#) 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 125: Output fields: ICMP6 interface

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

Label	Description
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

Displays only 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

Displays only the interface information associated with the specified IP interface name.

detail

Keyword to display detailed information.

Platforms

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Output

The following outputs are examples of IS-IS interface information, and [Table 127: Output fields: detailed IS-IS interface](#) describes the output fields.

Output example

```
A:node-2# 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
=====
```

Table 126: Output fields: IS-IS interface

Label	Description
Interface	The interface name
Level	The interface level (1, 2, or 1 and 2)
Circuit Id	The circuit identifier
Oper State	Up — the interface is operationally up Down — the interface is operationally down
Metric	The 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

The following outputs are examples of IS-IS interface information, and [Table 127: Output fields: detailed IS-IS interface](#) describes the output fields.

Output example

```
A:node-2# 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 Timer State  : Disabled
Route Tag        : None
Default Instance : N/A
Hello Padding    : Disabled
IPv4 Node SID    : Index 1
Flex Algo        : 128
  IPv4 Node SID  : Index 11
  Level          : 1
  Auth Keychain  : Disabled
  Auth Type      : None
  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

Ldp Sync Wait    : Disabled
Ldp Tm Left      : 0
LFA              : Included
Load Bal Weight  : None

IPv6 Node SID    : none
IPv6 Node SID    : None
Adjacencies      : 0

Metric           : 0
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
-----
Interface        : To_B
Oper State       : Up
Auth Keychain    : Disabled
Auth Type        : None
Circuit Id       : 3
Type             : Pt-to-Pt
Oper Type        : Pt-to-Pt
Mesh Group       : Inactive
LFA NH Template  : None
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
Default Instance : N/A
Hello Padding    : Disabled
Level           : 2
Auth Keychain    : Disabled
Auth Type        : None
Hello Timer      : 9
Priority          : 64
Passive          : No
SD-Offset        : 0
Hello Mult.      : 3
Hello Padding    : Disabled

Level Capability : L2
Admin State      : Up

Auth State       : Enabled
Retransmit Int.  : 5
LSP Pacing Int.  : 100
CSNP Int.        : 10
BER              : none
Bfd Enabled      : No
Te State         : Down

Ldp Sync Wait    : Disabled
Ldp Tm Left      : 0
LFA              : Included
Load Bal Weight  : None

Adjacencies      : 1

Metric           : 10
IPv6-Ucast-Met   : 10
IPv6-Mcast-Met   : 10
IPv4-Mcast-Met   : 10
SF-Offset        : 0
LSP Tx Q Count   : 0
-----
Interface        : To_C
Oper State       : Up
Auth Keychain    : Disabled
Auth Type        : None
Circuit Id       : 4
Type             : Pt-to-Pt
Oper Type        : Pt-to-Pt
Mesh Group       : Inactive
LFA NH Template  : None

Level Capability : L2
Admin State      : Up

Auth State       : Enabled
Retransmit Int.  : 5
LSP Pacing Int.  : 100
CSNP Int.        : 10
BER              : none
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
Default Instance: N/A
Hello Padding  : Disabled
Level         : 2
  Auth Keychain : Disabled
  Auth Type     : None
  Hello Timer   : 9
  Priority      : 64
  Passive       : No
  SD-Offset     : 0
  Hello Mult.   : 3
  Hello Padding : Disabled
Te State      : Down
Ldp Sync Wait : Disabled
Ldp Tm Left   : 0
LFA           : Included
Load Bal Weight : None
Adjacencies   : 1
  Metric       : 10
  IPv6-Ucast-Met : 10
  IPv6-Mcast-Met : 10
  IPv4-Mcast-Met : 10
  SF-Offset     : 0
  LSP Tx Q Count : 0
=====

```

Output example

```

A:node-2# show router isis interface "Loopback0" detail
=====
Rtr Base ISIS Instance 0 Interfaces (detail)
=====
-----
Interface      : Loopback0
Oper State     : Up
Auth Keychain  : Disabled
Auth Type      : None
Circuit Id     : 2
Type           : Pt-to-Pt
Oper Type      : Pt-to-Pt
Mesh Group     : Inactive
LFA NH Template : None
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
Default Instance: N/A
Hello Padding   : Disabled
IPv4 Node SID  : Index 3
IPv4 shared SID : <Yes/No>
Level          : 1
  Auth Keychain : Disabled
  Auth Type     : None
  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
Level Capability: L1L2
Admin State    : Up
Auth State     : Enabled
Retransmit Int. : 5
LSP Pacing Int. : 100
CSNP Int.      : 10
BER            : none
Bfd Enabled    : No
Topology       : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te State       : Down
Ldp Sync Wait  : Disabled
Ldp Tm Left    : 0
LFA            : Included
Load Bal Weight : None
IPv6 Node SID  : none
IPv6 shared SID : <Yes/No>
Adjacencies    : 0
  Metric       : 0
  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

```

Output example

```
A:node-2# show router isis interface "if1" detail

=====
Rtr Base ISIS Instance 0 Interfaces (detail)
=====
-----
Interface      : if1                               Level Capability: L1L2
Oper State     : Down                             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 : None                           Bfd Enabled      : No
Topology       : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te Metric      : 0                                Te State         : Down
Admin Groups   : None
Delay Normaliz. : Disabled
Minimum Delay  : N.A.                             Delay Tolerance  : N.A.
Measured Delay : 0 usec                           Normalized Delay : N.A.
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          : 1                                Adjacencies      : 0
Desg. IS       : 0000.0000.0000
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

Level          : 2                                Adjacencies      : 0
Desg. IS       : 0000.0000.0000
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
=====
```

Table 127: Output fields: detailed IS-IS interface

Label	Description
Interface	The interface name

Label	Description
Level Capability	The interface level (1, 2, or 1 and 2)
Oper State	Up — the interface is operationally up Down — the interface is operationally down
Admin State	Up — the interface is administratively up Down — the interface is administratively down
Auth Keychain	The authentication keychain name
Auth Type	The authentication type
Auth State	The authentication state
Circuit Id	The circuit identifier
Retransmit Int.	The retransmit interval, which is the minimum time between LSP PDU retransmissions
Type	Pt-to-Pt — the interface type is point-to-point Broadcast — the interface type is broadcast Non-Broadcast — X.25, Frame Relay, and similar technologies
LSP Pacing Int.	The LSP pacing interval defining the flooding pace to neighboring devices
Oper Type	The operational interface type: <ul style="list-style-type: none"> Broadcast – the operational interface type is broadcast Pt-to-Pt – the operational interface type is point-to-point
CSNP Int.	The interval between successive CSN PDUs being sent
Mesh Group	Displays if the mesh group is active or inactive
BER	The bit error rate
LFA NH Template	The LFA next-hop (NH) template configuration
Bfd Enabled	Displays if Bidirectional Forwarding (BFD) is enabled: <ul style="list-style-type: none"> Yes – BFD is enabled No – BFD is disabled
Topology	The IS-IS topology information
Te Metric	The TE metric configured for the interface
Te State	Displays if TE is enabled on the interface

Label	Description
Admin Groups	Displays the bitmap inherited from the MPLS interface that identifies the administrative groups to which this interface belongs
Delay Normaliz.	The state of delay normalization: <ul style="list-style-type: none"> Enabled – Delay normalization is enabled. When delay normalization is enabled, the normalized delay is used by the respective TLVs within the IGP link-state packets. Disabled – Delay normalization is disabled. When delay normalization is disabled, the measured delay is used by the respective TLVs within the IGP link-state packets
Minimum Delay	The minimum delay configured on the interface
Delay Tolerance	The interval granularity within the range
Measured Delay	The measured delay on the interface
Normalized Delay	The normalized delay on the interface
Ldp Sync	Displays if the IGP-LDP synchronization feature is enabled or disabled on all interfaces participating in the IS-IS routing protocol
Ldp Sync Wait	The time to wait for the LDP adjacency to come up
Ldp Timer State	The state of the LDP synchronized time left on the IS-IS interface
Ldp Tm Left	The time left before IS-IS reverts back to advertising the normal metric for this interface
Route Tag	The route tag of the entry
LFA	Displays if the Loop-Free Alternate (LFA) next-hop is included
Default Instance	The default instance for the entry
Load Bal Weight	The load balancing weight, if this weight is configured
Hello Padding	Displays if Hello padding is enabled
Level	The routing level for the IS-IS routing instance
Adjacencies	Displays the number of adjacencies with IS-IS neighbors
Desg. IS	The designated intermediate system
Auth Keychain	Displays if the authentication keychain is enabled
Auth Type	Displays the authentication type. If no type exists, the field displays as None.

Label	Description
Metric	The interface metric for Level 1 and Level 2, if none are set to 0
Hello Timer	The Hello timer for the entry
Ipv6-Ucast-Met	The IPv6 unicast metric for the entry
Priority	The priority for the entry
Ipv6-Mcast-Met	The IPv6 multicast metric for the entry
Passive	Displays if the interface operates as a normal IS-IS interface with regard to adjacency forming and network and link behavior
Ipv4-Mcast-Met	The IPv4 multicast metric for the entry
SD-Offset	The SD offset for the entry
SF-Offset	The SF offset for the entry
Hello Mult.	The Hello multiplier for the entry
LSP Tx Q Count	The LSP transmission Q count for the entry
Hello Padding	The Hello padding for the entry

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.



Note:

The **detail** keyword 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**

Keyword to display detailed information for the interface.
- database**

Keyword to display database information for the interface.

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Output

The following output is an example of the OSPF interface information, and [Table 128: Output fields: OSPF Interface](#) describes the output fields.

Output example – OSPFv2 system interface

```
A:node-2# show router ospf interface "system"
=====
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
=====
```

Output example – OSPFv2 interface output

```
A:node-2# show router ospf 1 interface "DUTC_TO_DUTB.1.0"
=====
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
```

Table 128: Output fields: OSPF Interface

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 disabled 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 BDR — this router is the Backup Designated Router for this network 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
No. of OSPF Interfaces	The number of interfaces listed

The following output is an example of detailed OSPF interface information, and [Table 129: Output fields: detailed OSPF Interface](#) describes the output fields.

Output example – OSPFv2 detailed system interface

```
A:node-2# show router ospf interface "system" detail
```

```
=====
Rtr Base OSPFv2 Instance 0 Interface "system" (detail)
=====
```

```
-----
Configuration
```

```

-----
IP Address      : 10.20.1.3
Area Id         : 6.6.6.6
Hello Intrvl    : 10 sec
Retrans Intrvl  : 5 sec
Cfg Metric      : 0
Transit Delay   : 1
Passive         : True
LSA-filter-out  : None
LFA             : Include
Load Bal Weight : None
Bfd Strict Mode : No
RIB-priority    : None
Delay Normaliz. : Disabled
Minimum Delay   : N.A.
Auth Type       : None
Priority         : 1
Rtr Dead Intrvl : 40 sec
Poll Intrvl     : 120 sec
Advert Subnet   : True
Cfg IF Type     : None
Cfg MTU         : 0
Adv Rtr Capab   : Yes
LFA NH Template : 
Bfd Enabled     : No
Bfd Str Holddown : 0 sec
Delay Tolerance : N.A.
-----
State
-----
Admin Status    : Enabled
Designated Rtr  : 10.20.1.2
IF Type         : Broadcast
Oper MTU        : 1500
Oper Metric     : 0
Te Metric       : 0
Admin Groups    : None
Measured Delay  : 0 usec
Ldp Sync        : outOfService
Ldp Timer State : Disabled
Oper State      : Designated Rtr
Backup Desig Rtr : 0.0.0.0
Network Type    : Stub
Last Enabled    : 09/17/2024 11:43:25
Te State        : Down
Normalized Delay : N.A.
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
Discards        : 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       : 2
Tot Tx Packets  : 0
Tx Hellos       : 0
Tx DBDs         : 0
Tx LSRs         : 0
Tx LSUs         : 0
Tx LS Acks      : 0
Tx Failures     : 0
Retransmits     : 0
Bad Virt Links  : 0
Bad Dest Addrs  : 0
Auth Failures   : 0
Bad Pkt Types   : 0
Bad Hello Int.  : 0
Bad Options     : 0
Bad Checksums   : 0
LSA Checksum    : 0x0
=====

```

Output example – OSPFv2 detailed interface

```

A:node-2# show router ospf 1 interface "DUTC_T0_DUTB.1.0" detail
=====
Rtr Base OSPFv2 Instance 1 Interface "DUTC_T0_DUTB.1.0" (detail)
=====
-----
Configuration
-----
IP Address      : 1.0.23.3
Area Id         : 0.0.0.0
Hello Intrvl    : 2 sec
Priority         : 1
Rtr Dead Intrvl : 10 sec

```

```

Retrans Intrvl : 5 sec          Poll Intrvl : 120 sec
Cfg Metric     : 7000          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 : template1
Auth Type      : None
-----
State
-----
Admin Status   : Enabled       Oper State     : Point To Point
Designated Rtr : 0.0.0.0       Backup Desig Rtr : 0.0.0.0
IF Type        : Point To Point Network Type    : Transit
Oper MTU       : 1500          Last Enabled    : 01/14/2014 14:33:07
Oper Metric    : 7000          Bfd Enabled     : No
Te Metric      : 7000          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      : 1
Tot Rx Packets : 603           Tot Tx Packets : 602
Rx Hellos      : 576           Tx Hellos      : 577
Rx DBDs        : 3             Tx DBDs        : 2
Rx LSRs        : 0             Tx LSRs        : 1
Rx LSUs        : 15            Tx LSUs        : 16
Rx LS Acks     : 9             Tx LS Acks     : 6
Retransmits    : 2             Discards       : 2
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrrs : 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.  : 1             Bad Options    : 0
Bad Versions   : 0             Bad Checksums  : 0
LSA Count      : 0             LSA Checksum   : 0x0
=====

```

Output example – OSPFv2 detailed interface

```

A:node-2# show router ospf 1 interface "ip_if_1" detail
=====
Rtr Base OSPFv2 Instance 1 Interface "ip_if_1" (detail)
=====
-----
Configuration
-----
IP Address      : 10.10.1.1          Priority       : 10
Area Id         : 0.0.0.0            Rtr Dead Intrvl : 45 sec
Hello Intrvl    : 9 sec              Poll Intrvl    : 120 sec
Retrans Intrvl  : 10 sec             Advert Subnet   : True
Cfg Metric      : 11                 Auth Type      : MD5
Transit Delay   : 2                  Cfg MTU        : 9198
Passive         : False
LFA             : Exclude
IPsec InStatSA  :                    IPsec OutStatSA :
IPsec InStatSATmp:
-----
State
-----
Admin Status    : Enabled            Oper State     : Down

```

Designated Rtr	: 0.0.0.0	Backup Desig Rtr	: 0.0.0.0
IF Type	: Secondary	Network Type	: Stub
Oper MTU	: 1576	Last Enabled	: Never
Oper Metric	: 11	Bfd Enabled	: No
Te Metric	: 16777215	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	: 0
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

Configuration

IP Address	: 10.10.1.1		
Area Id	: 1.1.1.1	Priority	: 10
Hello Intrvl	: 9 sec	Rtr Dead Intrvl	: 45 sec
Retrans Intrvl	: 10 sec	Poll Intrvl	: 120 sec
Cfg Metric	: 11	Advert Subnet	: False
Transit Delay	: 2	Auth Type	: MD5
Passive	: False	Cfg MTU	: 9198
LFA	: Exclude		
IPsec InStatSA	:	IPsec OutStatSA	:
IPsec InStatSATmp:			

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	: 1576	Last Enabled	: Never
Oper Metric	: 11	Bfd Enabled	: No
Te Metric	: 16777215	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	: 0
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 Auth Types : 0
Bad Neighbors  : 0
Bad Lengths    : 0
Bad Dead Int.  : 0
Bad Versions   : 0
LSA Count      : 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
=====

```

Output example – OSPFv2 detailed interface area

```

A:node-2# show router ospf 1 interface area 1.1.1.1 detail
=====
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 InStatSAmp:
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
=====

```

Output example – OSPFv2 detailed interface

```

A:node-2# show router ospf 1 interface detail
=====
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
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
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
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
=====

```

Output example – OSPF detailed interface

```

A:node-2# show router ospf interface "toB" detail
=====
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          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 12:50:44
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        : 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 Addrs    : 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
=====

```

Output Example

```

A:node-2# show router ospf interface detail "to_Dut-A"
=====
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 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
=====

```

Output example – OSPFv2 detailed interface

```

A:node-2# show router ospf interface "if1" detail
=====
Rtr Base OSPFv2 Instance 0 Interface "if1" (detail)
=====
Configuration
-----
IP Address      : 10.10.1.1          Priority        : 1
Area Id        : 6.6.6.6            Rtr Dead Intrvl : 40 sec
Hello Intrvl   : 10 sec              Poll Intrvl     : 120 sec
Retrans Intrvl : 5 sec               Advert Subnet    : True
Cfg Metric     : 0                   Cfg IF Type     : None
Transit Delay  : 1                   Cfg MTU         : 0
Passive        : False               Adv Rtr Capab   : Yes
LSA-filter-out : None                LFA NH Template :
LFA            : Include              Bfd Enabled     : No
Load Bal Weight : None               Bfd Str Holddown : 0 sec
Bfd Strict Mode : No
RIB-priority   : None
Delay Normaliz. : Disabled
Minimum Delay  : N.A.                Delay Tolerance : N.A.
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         : Broadcast           Network Type     : Stub
Oper MTU        : 576                Last Enabled     : 03/21/2024 12:02:35
Oper Metric     : 1000               Te State        : Down
Te Metric       : 1000
Admin Groups    : None
Measured Delay  : 0 usec              Normalized Delay : N.A.
Ldp Sync        : outOfService        Ldp Sync Wait   : Disabled
Ldp Timer State : Disabled            Ldp Tm Left     : 0

```

```

-----
Statistics
-----
Nbr Count      : 0          If Events      : 0
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
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      : 0          LSA Checksum   : 0x0
=====

```

Table 129: Output fields: detailed OSPF Interface

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.
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 the Hello packets of a router 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	False — when a point-to-point interface is configured as false, the subnet is not advertised and the endpoints are advertised as host routes

Label	Description
	True — when a point-to-point interface is configured to true, the subnet is advertised
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 or link behavior True — no OSPF Hellos will be sent out on this interface and the router advertises this interface as a stub network or link in its router LSAs
Cfg MTU	The required size of the largest packet that 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.
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 the following values: <ul style="list-style-type: none"> • Yes – BFD is enabled • No – BFD is disabled
Bfd Strict Mode	This field indicates if BFD strict-mode is enabled. The field includes the following values: <ul style="list-style-type: none"> • Yes – BFD strict-mode is enabled • No – BFD strict-mode is disabled
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 configure router ospf area interface rib-priority [high] command.
Delay Normaliz.	Displays the state of delay normalization:

Label	Description
	<ul style="list-style-type: none"> Enabled – delay normalization is enabled and normalized delay is used by the respective TLVs within the IGP link-state packets. Disabled – delay normalization is disabled and measured delay is used by the respective TLVs within the IGP link-state packets
Minimum Delay	The lowest delay allowed on the interface
Delay Tolerance	The delay interval granularity
Auth Type	<p>Displays the authentication procedure to be used for the packet:</p> <p>None — routing exchanges over the network/subnet are not authenticated</p> <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 or subnet. For each OSPF protocol packet, the key is used to generate or verify a "message digest" that is appended to the end of the OSPF packet.</p>
State	
Admin Status	<p>Disabled — OSPF on this interface is administratively shut down</p> <p>Enabled — OSPF on this interface is administratively enabled</p>
Oper State	<p>Down — this is the initial interface state. In this state, the lower-level protocols have indicated that the interface is unusable</p> <p>Waiting — the router is trying to determine the identity of the (Backup) Designated Router for the network</p> <p>Point To Point — the interface is operational, and connects either to a physical point-to-point network or to a virtual link.</p> <p>Designated Rtr — this router is the Designated Router for this network</p> <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>
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.

Label	Description
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
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	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	Displays if TE is enabled on the interface
Admin Groups	Displays the bitmap inherited from MPLS interface that identifies the admin groups to which this interface belongs
Measured Delay	The measured delay on the interface. When delay normalization is disabled, the measured delay is used by the respective TLVs within IGP link-state packets.
Normalized Delay	The delay normalized based on the configuration. When normalized delay is configured, the respective TLVs within the IGP link-state packets use the normalized delay value
Ldp Sync	Displays whether the IGP-LDP synchronization feature is enabled or disabled on all interfaces participating in the OSPF routing protocol
Ldp Sync Wait	The time to wait for the LDP adjacency to come up
Ldp Timer State	The state of the LDP sync time left on the OSPF interface

Label	Description
Ldp Tm Left	Displays the time left before OSPF reverts back to advertising normal metric for this interface
Statistics	
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.
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	The transmitted OSPF packets that are dropped due to resource shortage

Label	Description
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 Addrs	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
Bad Lengths	The total number of OSPF packets received on this interface with a total length not equal to the length provided in the packet itself since this interface was last enabled
Bad Hello Int.	The total number of OSPF packets received where the hello interval provided 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 provided 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

7705 SAR Gen 2

Output

The following output is an example of an OSPFv3 interface information, and [Table 130: Output fields: OSPFv3 interface detail](#) 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
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
IPsec InStatSA   :
IPsec InStatSAmp:

Priority         : 1
Rtr Dead Intrvl : 10 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
Te Metric         : 1000
Admin Groups      : None
Ldp Sync          : outOfService
Ldp Timer State   : Disabled

Oper State        : Designated Rtr
Backup Desig Rtr  : 10.0.0.2
Network Type      : Transit
Last Enabled      : 08/12/2021 12:50:45
Bfd Enabled       : No
Te State          : Down
Ldp Sync Wait     : Disabled
Ldp Tm Left       : 0

-----
Statistics
-----
Nbr Count         : 1
Tot Rx Packets     : 141
Rx Hellos          : 93
Rx DBDs            : 3
Rx LSRs            : 1
Rx LSUs            : 39
Rx LS Acks         : 5
Discards           : 0

If Events          : 2
Tot Tx Packets     : 162
Tx Hellos          : 94
Tx DBDs            : 2
Tx LSRs            : 1
Tx LSUs            : 62
Tx LS Acks         : 3
Tx Failures        : 0
Retransmits        : 0
Bad Networks       : 0
Bad Virt Links     : 0
Bad Dest Addrs     : 0
Auth Failures      : 0
Bad Pkt Types      : 0
```

```

Bad Lengths      : 0
Bad Dead Int.    : 0
Bad Versions     : 0
LSA Count        : 2
Bad Hello Int.   : 0
Bad Options      : 0
Bad Checksums    : 0
LSA Checksum     : 0x136b4
=====

```

Table 130: Output fields: OSPFv3 interface detail

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.
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

Label	Description
	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	<p>Down — This is the initial interface state. In this state, the lower-level protocols have indicated that the interface is unusable.</p> <p>Waiting — The router is trying to determine the identity of the (Backup) Designated router for the network.</p> <p>Point To Point — The interface is operational, and connects either to a physical point-to-point network or to a virtual link.</p> <p>Designated Rtr — This router is the Designated router for this network.</p> <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	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.
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.

Label	Description
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.
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 Addr	The total number of OSPF packets received with the incorrect IP destination address since this interface was last enabled.

Label	Description
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.
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                               Shared node sid : <Yes/No>
Area Id          : 0.0.0.0                           Priority        : 1
Hello Intrvl     : 10 sec                             Rtr Dead Intrvl : 40 sec
Retrans Intrvl   : 5 sec                             Poll Intrvl     : 120 sec
Cfg Metric       : 0                                 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* [*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

7705 SAR Gen 2

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>ospf3 interface)
- [Tree] (monitor>router>ospf interface)

Full Context

monitor router ospf3 interface
monitor router ospf 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

7705 SAR Gen 2

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 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
-----
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 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		

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 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		

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 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		

=====

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 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

```

At time t = 3 sec (Mode: Rate)

```

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
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

```

At time t = 6 sec (Mode: Rate)

```

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
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

```

At time t = 9 sec (Mode: Rate)

```

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
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

```

=====

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
7705 SAR Gen 2

11.26 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
7705 SAR Gen 2

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 131: Output fields: interface ID mapping describes interface ID mapping field descriptions.

Table 131: Output fields: interface ID mapping

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.

11.27 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

7705 SAR Gen 2

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 used	Filters avail	MAC/IP entries used	MAC/IP entries avail	IPv6 entries used	IPv6 entries avail
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				

11.28 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

7705 SAR Gen 2

Output

Show Filter (no policy specified) — The following is an output example of IPv4 filter information when no policy is specified. [Table 132: Output fields: IP filter ID](#) 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 132: Output fields: IP filter ID

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 133: Output fields: IP \(no filter ID specified\)](#) 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 133: Output fields: IP (no filter ID specified)

Label	Description
In	Shows embedding filter index

Label	Description
From	Shows embedded filters included
Priority	Shows priority of embedded filter
Inserted	Shows embedded/total number of entries from embedded filter. Status: OK — embedding operation successful, if any entries are overwritten this will also be indicated Failed — 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 134: Output fields: IP filter policy](#) 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 134: Output fields: IP filter policy

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

Label	Description
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
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

Label	Description
	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"> match true is represented with the TCP flag value match false is represented with an exclamation mark before the flag value <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 egress-pbr flag is set for this entry
Primary Action	Indicates the configured action, if any; indented sub-labels in the show output provide configured parameters for this action

Label	Description
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 135: Output fields: IP associations](#) 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 135: Output fields: IP associations

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 136: Output fields: IP counters](#) 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 136: Output fields: IP counters

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
PccRl. Ins Pt	Indicates the PCC rule insertion point, if any

Label	Description
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 137: Output fields: filter IP effective action](#) 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 137: Output fields: filter IP effective action

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
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

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 *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 | _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], 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

7705 SAR Gen 2

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

7705 SAR Gen 2

ip

Syntax

ip

Context

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

Full Context

show system ip

Description

This command displays the system IP configuration.

Platforms

7705 SAR Gen 2

```
ip
```

Syntax

```
ip
```

Context

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

Full Context

```
clear ip
```

Description

Commands in this context clear IP tunnel information.

Platforms

7705 SAR Gen 2

```
ip
```

Syntax

```
ip
```

Context

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

Full Context

```
show ip
```

Description

Commands in this context display IP related information.

Platforms

7705 SAR Gen 2

11.29 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

7705 SAR Gen 2

Output

The following output is an example of IPv4 exception filter information, and [Table 138: Output fields: IPv4 exception](#) 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 138: Output fields: IPv4 exception

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
7705 SAR Gen 2

11.30 ip-filter

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
7705 SAR Gen 2

Output
The following output is an example of MAF IP filter information and [Table 139: Output fields: management access filter](#) 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 139: Output fields: management access filter

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.
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 *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

7705 SAR Gen 2

11.31 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-regex 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 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: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

7705 SAR Gen 2

11.32 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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of IPv4 prefix information for match criteria in IPv4 ACL and CPM filter policies, and [Table 140: 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 140: 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
References	Displays reference information

11.33 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
7705 SAR Gen 2

11.34 ipoe

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

7705 SAR Gen 2

11.35 ipsec

ipsec

Syntax

ipsec

Context

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

Full Context

clear ipsec

Description

Commands in this context clear IPsec commands.

Platforms

7705 SAR Gen 2

ipsec

Syntax

ipsec

Context

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

Full Context

show ipsec

Description

Commands in this context display IPsec related information.

Platforms

7705 SAR Gen 2

ipsec

Syntax

ipsec

Context

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

Full Context

tools dump ipsec

Description

Commands in this context dump IPsec information.

Platforms

7705 SAR Gen 2

ipsec

Syntax

ipsec

Context

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

Full Context

tools perform ipsec

Description

Commands in this context perform IPsec operations.

Platforms

7705 SAR Gen 2

ipsec

Syntax

ipsec

Context

[\[Tree\]](#) (show>router>interface ipsec)

Full Context

show router interface ipsec

Description

This command displays IPsec specific information.

Platforms

7705 SAR Gen 2

11.36 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

7705 SAR Gen 2

Output

The following output is an example of IPsec domain information. [Table 141: Output fields: IPsec domain](#) 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                Oper   Remote   Remote
Router-Id           State  Activity Designated
                    State  State    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 141: Output fields: IPsec domain

Label	Description
Designated Role	The designated role, active or standby.
Priority	The priority.
Tunnel Group	The tunnel group ID.
Revertive	The revertive value. true means that revertive is configured. false means that revertive is not configured.
Admin State	The administrative state.
Protection Status	Displays nominal or notReady. notReady means the system is not ready for a switchover. There could be a major traffic impact if switchover happens in the case of notReady. nominal means the tunnel-group is in a better situation to switchover than notReady. However, there still might be a traffic impact.
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.

Label	Description
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.

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

7705 SAR Gen 2

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
index          : 1583392
version        : 2
querier up     : 11384
next query     : 56
querier        : fe80::6e:9c56:9651:5829
sa-id          : 1
state          : in-service
group count    : 0
querier expiry: 0
interface name: ipsec-if-1583392
=====
```

11.38 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

7705 SAR Gen 2

11.39 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

7705 SAR Gen 2

Output

The following output is an example of IPsec transport mode profile information. [Table 142: Output fields: IPsec transport mode profile](#) 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 142: Output fields: IPsec transport mode profile

Label	Description
Description	The text string to describe the transport mode profile

Label	Description
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.
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

11.40 ipv4

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

7705 SAR Gen 2

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 [cf1ash-id]/[file-path]

cf1ash-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

7705 SAR Gen 2

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

- **ex** *lt: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

7705 SAR Gen 2

11.41 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

7705 SAR Gen 2

11.42 ipv6

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 display 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

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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

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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 143: Output fields: filter IPv6 \(no filter ID specified\)](#) 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 143: Output fields: filter IPv6 (no filter ID 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: OK — embedding operation successful, if any entries are overwritten this will also be indicated Failed — 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 144: Output fields: IPv6 filter policy](#) 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 144: Output fields: IPv6 filter policy

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"> "::/0" indicates no criterion specified for the filter entry
Dest. IP	The destination IPv6 address and mask match criterion <ul style="list-style-type: none"> "::/0" indicates no criterion specified for the filter entry
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"> match true is represented with the TCP Flag value match false is represented with an exclamation mark before the flag value <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 145: Output fields: IPv6 filter associations](#) 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 145: Output fields: IPv6 filter associations

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"> "0.0.0.0/0" indicates no criterion specified for the filter entry
Dest. IP	The destination IPv6 address and mask match criterion <ul style="list-style-type: none"> "0.0.0.0/0" indicates no criterion specified for the filter entry
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 146: Output fields: IPv6 filter counters](#) 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 146: Output fields: IPv6 filter counters

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 147: Output fields: IPv6 filter effective action](#) 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 147: Output fields: IPv6 filter effective action

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 egress-pbr 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

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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

7705 SAR Gen 2

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 <i>local-url</i> . The local file or folder name should not exceed 99 characters).
local-url	[<i>cflash-id</i>]/[<i>file-path</i>]
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

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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

7705 SAR Gen 2

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 | _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

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

7705 SAR Gen 2

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*
 - **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 FFFFFFFFFFFF
 - **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

7705 SAR Gen 2

11.43 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

7705 SAR Gen 2

Output

The following output is an example of IPv6 exception filter information, and [Table 148: Output fields: IPv6 exception](#) 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 148: Output fields: IPv6 exception

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.

Label	Description
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.
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.

Values1 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.

Values1 to 2097151
- ingress

Specifies to only clear the ingress counters.

Platforms
7705 SAR Gen 2

11.44 ipv6-filter

```
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.
- Parameters

entry-id

Specifies the IPv6 filter entry ID to display.

Values1 to 9999

Platforms

7705 SAR Gen 2

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 *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.

Values1 to 65535
- filter-name**

Specifies name of the IPv6 filter, up to 64 characters.

Platforms
7705 SAR Gen 2

11.45 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 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.

Platforms
7705 SAR Gen 2

11.46 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

7705 SAR Gen 2

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

7705 SAR Gen 2

11.47 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

7705 SAR Gen 2

isa

Syntax

isa

Context

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

Full Context

clear isa

Description

Commands in this context clear ISA commands.

Platforms

7705 SAR Gen 2

isa

Syntax

isa

Context

[\[Tree\]](#) (clear>nat isa)

Full Context

clear nat isa

Description

Commands in this context clear ISA NAT commands.

Platforms

7705 SAR Gen 2

isa

Syntax

isa

Context

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

Full Context

show isa

Description

Commands in this context display ISA information.

Platforms

7705 SAR Gen 2

11.48 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

7705 SAR Gen 2

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                      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 *leve*l]

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

7705 SAR Gen 2

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      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
=====

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 [*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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

11.49 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

7705 SAR Gen 2

12 k Commands

12.1 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

7705 SAR Gen 2

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#

```

13 I Commands

13.1 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 I2-route-table)

Full Context

show service I2-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

7705 SAR Gen 2

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
=====
```

l2-route-table

Syntax

l2-route-table [**detail**] [**bgp-ad**] [**multi-homing**] [**bgp-vpls**] [**bgp-vpws**] [**all-routes**]

Context

[\[Tree\]](#) (show>service>id l2-route-table)

Full Context

show service id l2-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

7705 SAR Gen 2

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 149: Output fields: service ID Layer 2 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

Label	Description
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
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

13.2 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 l2-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 <= 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 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

7705 SAR Gen 2

13.3 l2pt

l2pt

Syntax

- l2pt disabled
- l2pt [detail]

Context

[Tree] (show>service>id l2pt)

Full Context

show service id l2pt

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

7705 SAR Gen 2

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-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#

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 150: Output fields: L2PT describes show L2PT output fields.

Table 150: Output fields: L2PT

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.
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.
SapId	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.

l2pt

Syntax

l2pt

Context

[\[Tree\]](#) (clear>service>statistics>id l2pt)

Full Context

clear service statistics id l2pt

Description

This command clears the l2pt statistics for this service.

Platforms

7705 SAR Gen 2

13.4 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

7705 SAR Gen 2

Output

The following output is an example of MPLS label information.

Table 151: Output fields: MPLS label describes MPLS label output fields.

Table 151: Output fields: MPLS label

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#
```

13.5 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*
 - **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 IPv4 routes.

Platforms

7705 SAR Gen 2

13.6 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 FFFFFFFFFFFF
 - **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

7705 SAR Gen 2

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
Nexthop       : ::ffff:10.20.1.4
Path Id       : None
To            : 10.20.1.6
Res. Nexthop  : 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
Originator Id : None
IPv6 Label    : 2 (Ipv6 Explicit-Null)
Lbl Allocation : EXPLICIT-NULL
Origin        : IGP
AS-Path       : No As-Path
Route Tag     : 0
Neighbor-AS   : n/a
Orig Validation : NotFound
Source Class  : 0
Prefix SID    : index 2, originator-srgb [18450/16551]
Peer Router Id : 10.20.1.6
Label Type    : POP
Interface Name : NotAvailable
Aggregator    : None
MED           : 1
IGP Cost      : n/a

-----
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
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : No Community Members
Interface Name : to_A
Aggregator    : None
MED           : None
IGP Cost      : 0
```

```
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
```

13.7 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
7705 SAR Gen 2

Output
The following output is an example of MPLS label range information.

[Table 152: Output fields: MPLS label range](#) describes the MPLS label range output fields.

Table 152: Output fields: MPLS label range

Label	Description
Label Type	Displays the information about static-lsp , static-svc , and dynamic label types.
Start Label	The label value assigned at the ingress router.

Label	Description
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
=====
```

13.8 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
7705 SAR Gen 2

13.9 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
7705 SAR Gen 2

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 153: Output fields: service ID labels describes show service-id labels output fields:

Table 153: Output fields: service ID labels

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

13.10 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

7705 SAR Gen 2

13.11 lag

lag

Syntax

lag [*lag-id*] **[detail]** **[statistics]**
lag [*lag-id*] **[detail]** **[lacp-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

7705 SAR Gen 2

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:node-2# show lag
=====
Lag Data
=====
Lag-id   Adm   Opr   Weighted Threshold Up-Count MC Act/Stdbby
name
-----
1        up    down  No          0          0        active
lag-1
2        up    down  No          0          0        N/A
lag-2
-----
Total Lag-ids: 2      Single Chassis: 1      MC Act: 1      MC Stdbby: 0
=====
```

Output Fields: show lag

Table 154: Output fields: LAG describes the output fields for the **show lag** command.

Table 154: Output fields: 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. 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                   Hash-Weights Up     : 0
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		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 155: Output fields: LAG 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 155: Output fields: LAG detail

Label	Description
Lag-id	The LAG identification.
Lag-name	The LAG name.
Mode	The LAG mode: <ul style="list-style-type: none"> access

Label	Description
	<ul style="list-style-type: none"> • hybrid • network
Adm	<p>Administrative state of the LAG.</p> <p>Up — The LAG is administratively up.</p> <p>Down — The LAG is administratively down.</p>
Opr	<p>Operational state of the LAG.</p> <p>Up — The LAG is operationally up.</p> <p>Down — The LAG is operationally down.</p>
Thres. Last Cleared	<p>The last time that port or weight thresholds were cleared:</p> <ul style="list-style-type: none"> • when there is a falling or rising hit • when they are configured and immediately reached • when they are not configured when reached <p>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.</p>
Thres. Exceeded Cnt	<p>The number of times that the weight or port threshold rising counter was reached.</p> <p>The Thresh. Exceed counter displays the rising counter, as the falling counter is only available via SNMP.</p> <p>When we configure or deconfigure the port or weight threshold, the Thresh. Exceed counter is set to 0.</p>
Dynamic Cost	<p>Enabled — Dynamic cost is enabled.</p> <p>Disabled — Dynamic cost is disabled.</p>
Encap Type	<p>The LAG port encapsulation type:</p> <ul style="list-style-type: none"> • dot1q • null • qinq
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)	<p>Displays the configured QoS mode:</p> <ul style="list-style-type: none"> • distribute • link • port-fair

Label	Description
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"> hs standard
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.
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.

Label	Description
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"> • port-speed — the port hashing value is inherited from the port speed • hash-weight — the LAG port hash-weight value is used to customize flow distribution per port
Port weight speed	The LAG port weight speed value for mixed-speed LAG.
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"> • hash-weight-threshold • port-threshold • weight-threshold
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.

Label	Description
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 156: Output fields: LAG statistics](#) describes the output fields for the **show lag statistics** command.

Table 156: Output fields: 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.

Label	Description
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:node-2# 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 157: Output fields: LAG egress rate distribution](#) describes the output fields for the **show lag <lag-id> egress-rate-distribution** command.

Table 157: Output fields: LAG 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:node-2>config>lag# show lag 1 lacp-statistics
=====
LAG LACP Statistics
=====
LAG-id  Port-id      Tx      Rx      Rx Error  Rx Illegal
(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 158: Output fields: LAG LACP statistics](#) describes the output fields for the **show lag <lag-id> lacp-statistics** command.

Table 158: Output fields: LAG 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 admin-down or when LACP is not enabled.
Rx Illegal (Pdus)	The number of illegal packets received.

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 159: Output fields: LAG flow distribution](#) describes the output fields for the **show lag flow-distribution** command.

Table 159: Output fields: LAG flow distribution

Label	Description
Bandwidth	The physical bandwidth speed per active LAG port.

Label	Description
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 160: Output fields: LAG associations](#) describes the output fields for the **show lag <lag-id> associations** command.

Table 160: Output fields: LAG associations

Label	Description
Service ID	The service associated with the LAG.
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
LACP Transmit Intvl                : fast
Selection Criteria                  : highest-count
MUX control                         : coupled
Subgrp hold time                    : 1.0 sec
Subgrp selected                     : 2
Subgrp count                        : 1
System Id                          : 10:0e:ff:00:00:00
Admin Key                           : 32768
Prtr System Id                     : 1e:0e:ff:00:00:00
Prtr Oper Key                       : 32768
Standby Signaling                   : lacp
Port hashing                        : port-speed
Ports Up                           : 2
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 System Id                       : 00:00:00:00:00:01
MC Admin Key                       : 1
MC Lacp ID in use                  : true
MC Selection Logic                  : local master decided
MC Config Mismatch                 : no mismatch

Mode                               : passive
LACP xmit stdby                    : enabled
Slave-to-partner                   : disabled
Remaining time                     : 0.0 sec
Subgrp candidate                    : -
System Priority                     : 32768
Oper Key                           : 1
Prtr System Priority                : 32768
Port weight speed                   : 0 gbps
Hash-Weights Up                    : 2
MC Peer Lag-id                     : 1
MC System Priority                  : 100
MC Active/Standby                  : active
MC extended timeout                : false

```

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> lacp-partner

```

A:ALU-Dut1# show lag 3 lacp-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 lacp-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* **bfd-session** family {**ipv4** | **ipv6**} **lag-port** *port-id*
 - lag** *lag-id* **lacp-statistics**
 - lag** *lag-id* **statistics** [**aggregate-queue**]

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.

aggregate-queue

Keyword that clears the aggregate queue statistics on a PXC-based LAG.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

lag

Syntax

lag

Context

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

Full Context

tools perform lag

Description

This command provides tools for controlling LAG.

Platforms

7705 SAR Gen 2

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
7705 SAR Gen 2

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
Util.
Ingress Queue 1 Packets Octets
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
=====			

13.12 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
7705 SAR Gen 2

ldp

Syntax
ldp

Context
[\[Tree\]](#) (show>router ldp)

Full Context
show router ldp

Description
This command displays LDP information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

ldp

Syntax

ldp

Context

[\[Tree\]](#) (monitor>router ldp)

Full Context

monitor router ldp

Description

This command monitors commands for the LDP instance.

Platforms

7705 SAR Gen 2

13.13 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

7705 SAR Gen 2

13.14 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

7705 SAR Gen 2

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

7705 SAR Gen 2

13.15 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 IPoE session or for hosts that are not associated with an IPoE session.

Values none, ipoe

detail

Displays detailed information.

Platforms

7705 SAR Gen 2

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 161: Output fields: DHCP lease state describes service DHCP lease-state information.

Table 161: Output fields: DHCP lease state

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
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

Field	Description
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	
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

Field	Description
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
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

Field	Description
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 GO"
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 GO"
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.

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

7705 SAR Gen 2

Output

The following output is an example of DHCP6 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 Lease   MC
                  LeaseTime   Origin   Stdbby
-----
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 162: Output fields: DHCPv6 lease state router advertisement describes DHCPv6 lease state router advertisement policy output fields.

Table 162: Output fields: DHCPv6 lease state router advertisement

Field	Description
Service ID	The service ID provided by the access node to which this subnet is bound
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

Field	Description
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
Dhcp6 InterfaceId	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

Field	Description
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
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 (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
7705 SAR Gen 2

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.

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

7705 SAR Gen 2

13.16 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

7705 SAR Gen 2

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 163: Output fields: leases describes leases output fields.

Table 163: Output fields: leases

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

7705 SAR Gen 2

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 164: Output fields: DHCP6 lease describes DHCP6 lease fields.

Table 164: Output fields: DHCP6 lease

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

7705 SAR Gen 2

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

7705 SAR Gen 2

13.17 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

7705 SAR Gen 2

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>ospf lfa-coverage)
- [Tree] (show>router>ospf3 lfa-coverage)

Full Context

- show router ospf lfa-coverage
- show router ospf3 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

7705 SAR Gen 2

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%)
=====
```

13.18 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

7705 SAR Gen 2

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	

			Entitlement
IOM Upgrades	:	!cr-er	1
	:	!er-he	1
	:	!cr400g-cr1200g+	1
	:	!er400g-er1200g+	1
	:	!he400g-he1200g+	1
	:	!cr-er1200g+	1
MDA Upgrades	:	!er-he1200g+	1
	:	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			

13.19 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.

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

7705 SAR Gen 2

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 165: Output fields: licensing](#)
 - [Output Example: show licensing audit](#); [Output Fields Table 166: Output fields: licensing audit](#)
 - [Output Example: show licensing entitlements](#); [Output Fields Table 167: Output fields: 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 165: Output fields: licensing](#) describes the output fields for the **show licensing** command.

Table 165: Output fields: licensing

Label	Description
Connector	The identity of connector for the license limits.
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.

Label	Description
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

```
A:node-2# show licensing audit
```

```
=====
License                               Current   Current   Previous
Allocated   Max       24 Hr Max
-----
Network Mgmt
NRC-F                      0         0         0
NRC-P                      0         0         0
BGP-LS                    0         0         0
BMP Station                0         0         0
Route Origination          0         0         0
Port Licenses
7x50 SR/XRS Port 1GE       0         0         0
7x50 SR/XRS Port 10GE      0         0         0
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     0         0         0
7x50 SR/XRS Port 400GE     0         0         0
7x50 SR/XRS Port 800GE     0         0         0
=====
Last 24 Hr Interval Ended: 04/15/2025 13:21:47
```

Output Fields

[Table 166: Output fields: licensing audit](#) describes the output fields for the **show licensing audit** command.

Table 166: Output fields: 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 167: Output fields: licensing entitlement describes the output fields for the **show licensing entitlement** command.

Table 167: Output fields: 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.
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">VALID — license can be used in the node.VIOLATION — license is in use but not covered by the currently activated license key file.

13.20 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

7705 SAR Gen 2

13.21 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

7705 SAR Gen 2

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#
```

13.22 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

7705 SAR Gen 2

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#
```

13.23 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

7705 SAR Gen 2

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     : TiMOS-B-0.0.I8066 both/x86_64 Nokia 7705 SAR
                        Copyright (c) 2000-2025 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 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

7705 SAR Gen 2

Output

The following output is an example LLDP port information, and [Table 168: 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 (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
```

```
=====
```

Table 168: 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
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

Label	Description
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

13.24 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

7705 SAR Gen 2

Output

The following output is an example of LLDP member port information, and [Table 169: 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 169: 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-iframe – 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 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

13.25 Ins-group

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.

Values	<i>mda-id:</i>	<i>slot/mda</i>	
		slot	1 to 10
		<i>mda</i>	1 to 2

vapp-id

Specifies the ESA and VM identifying an LNS group.

Values	<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

7705 SAR Gen 2

13.26 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

7705 SAR Gen 2

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#
```

13.27 local-dhcp-server

local-dhcp-server

Syntax

local-dhcp-server *server-name*

Context

[\[Tree\]](#) (show>router>dhcp local-dhcp-server)

[\[Tree\]](#) (show>router>dhcp6 local-dhcp-server)

Full Context

show router dhcp local-dhcp-server

show router dhcp6 local-dhcp-server

Description

This command displays local DHCP or DHCP6 server information.

Parameters

server-name

Specifies information about the local DHCP server.

Platforms

7705 SAR Gen 2

local-dhcp-server

Syntax

local-dhcp-server *server-name*

Context

[\[Tree\]](#) (clear>router>dhcp local-dhcp-server)

[\[Tree\]](#) (clear>router>dhcp6 local-dhcp-server)

Full Context

clear router dhcp local-dhcp-server

clear router dhcp6 local-dhcp-server

Description

This command clears DHCP server data.

Parameters

server-name

Clears data for the specified local DHCP server.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

13.28 local-user-db

local-user-db

Syntax

local-user-db *local-user-db-name* **association** [dhcp] [ppp] [l2tp] [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

7705 SAR Gen 2

Output

The following commands display local user database information and [Table 170: Output fields: local user database](#) 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	
1/1/c1/1:2422.*	10	VPLS			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 State	Matched objects
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 Overrides

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 Overrules
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 170: Output fields: local user database

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

7705 SAR Gen 2

13.29 lockout

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

7705 SAR Gen 2

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

7705 SAR Gen 2

13.30 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of filter log entry information, and [Table 171: Output fields: filter log](#) describes the fields. If log summary is active, the filter log mini-tables contain the information described in [Table 172: Output fields: filter log summary \(mini-tables\)](#).

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 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:
Ipv6     8 3ffe:1616:1616:1616:1616:1616:ffff:ffff
Ipv6     8 3ffe:1616:1616:1616:1616:1616:ffff:fffe
Ipv6     8 3ffe:1616:1616:1616:1616:1616:ffff:fffd
Ipv6     8 3ffe:1616:1616:1616:1616:1616:ffff:fffc
=====
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 171: Output fields: filter log

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
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

Label	Description
	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 172: Output fields: filter log summary \(mini-tables\)](#).

Table 172: Output fields: filter log summary (mini-tables)

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

7705 SAR Gen 2

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

7705 SAR Gen 2

log

Syntax

log

Context

[Tree] (tools>dump log)

Full Context

tools dump log

Description

Commands in this context dump log information.

Platforms

7705 SAR Gen 2

log

Syntax

log

Context

[Tree] (tools>perform log)

Full Context

tools perform log

Description

This command enables tools for event logging.

Platforms

7705 SAR Gen 2

13.31 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
7705 SAR Gen 2

Output
The following output is an example of log collector information.
[Table 173: Output fields: log collector](#) 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 173: Output fields: log collector

Label	Description
<Collector Name>	Main — The main event stream contains the events that are not explicitly directed to any other event stream.

Label	Description
	<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> <p>Syslog — Log events are sent to a syslog receiver.</p> <p>SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables.</p> <p>File — All selected log events are directed to a file on one of the compact flash disks.</p> <p>Memory — All selected log events are directed to an in-memory storage area.</p>

13.32 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

7705 SAR Gen 2

13.33 log-id

log-id

Syntax

log-id [*log-id*] [**severity** *severity-level*] [**application** *application*] [**sequence** *from-seq* [*to-seq*]] [**count** *count*] [**subject** *subject* [*regex*]] [**ascending** | **descending**] [**message** *format* [*msg-regex*]]

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, mcpaath, mc_redundancy, mirror, mld, mld_snooping, mpls, mpls_tp, mrp, 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.

regex

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-regex

Specifies to use a regular expression as parameters with the specified message string.

Platforms

7705 SAR Gen 2

Output

Table 174: Output fields: log ID describes the log ID field output.

Table 174: Output fields: log ID

Label	Description
Log 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.

Label	Description
	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	<p>Console — All selected log events are directed to the system console. If the console is not connected, then all entries are dropped.</p> <p>Syslog — All selected log events are sent to the syslog address.</p> <p>SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables.</p> <p>File — All selected log events are directed to a file on one of the CPM's compact flash disks.</p> <p>Memory — All selected log events are directed to an in-memory storage area.</p>
Dest ID	The event log stream destination.
Size	The allocated memory size for the log.
Time format	<p>The time format specifies the type of timestamp format for events sent to logs where log ID destination is either syslog or file.</p> <p>When the time format is UTC, timestamps are written using the Coordinated Universal Time value.</p> <p>When the time format is local, timestamps are written in the system's local time.</p>

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.

regex

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

7705 SAR Gen 2

Output

The following output is an example of log ID information.

Table 175: Output fields: log ID describes the log ID field output.

Output Example

A:bkvm30# show log log-id

Event Logs								
Log Source Name/Id	Filter Id	Admin State	Oper State	Logged	Dropped	Dest Type	Dest Id	Size
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:gall71# 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 175: Output fields: log ID

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.

Label	Description
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	<p>Console — All selected log events are directed to the system console. If the console is not connected, then all entries are dropped.</p> <p>Syslog — All selected log events are sent to the syslog address.</p> <p>SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables.</p> <p>File — All selected log events are directed to a file on one of the CPM's compact flash disks.</p> <p>Memory — All selected log events are directed to an in-memory storage area.</p>
Dest ID	The event log stream destination.
Size	The allocated memory size for the log.
Time format	<p>The time format specifies the type of timestamp format for events sent to logs where log ID destination is either syslog or file.</p> <p>When the time format is UTC, timestamps are written using the Coordinated Universal Time value.</p> <p>When the time format is local, timestamps are written in the system's local time.</p>

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

7705 SAR Gen 2

13.34 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

7705 SAR Gen 2

13.35 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

7705 SAR Gen 2

13.36 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

7705 SAR Gen 2

loopback

Syntax

loopback

Context

[\[Tree\]](#) (tools>dump>service loopback)

Full Context

tools dump service loopback

Description

This command displays all configured Ethernet loopbacks.

Platforms

7705 SAR Gen 2

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 pxc-id.sub-port

pxc: keyword

id: 1 to 64

sub-port: a, b

lag-id lag-id

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

7705 SAR Gen 2

13.37 Isn

Isn

Syntax

Isn create router router-instance [**b4** ipv6-address] [**after** 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

7705 SAR Gen 2

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
```

13.38 lsn-blocks

lsn-blocks

Syntax

lsn-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 lsn-blocks)

Full Context

show router nat lsn-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

7705 SAR Gen 2

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#
```

13.39 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

7705 SAR Gen 2

Output

The following output is an example of MPLS LSP and detail information, and [Table 176: Output fields: MPLS LSP](#) and [Table 177: Output fields: LSP detail](#) describes the MPLS LSP output fields.

Output Example

```
# show router mpls lsp
=====
MPLS LSPs (Originating)
=====
```

LSP Name	To	Fastfail Config	Adm	Opr
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                        None
Least Fill : Disabled
BFD Template : None         BFD Ping Intvl : 60
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
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
BFD Template  : None
BFD Enable    : 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

Primary(a)    : E1
Bandwidth     : 0 Mbps
Standby       : E2
Bandwidth     : 0 Mbps
Up Time       : 0d 00:19:32
Down Time     : 0d 00:19:46
=====

```

```

# 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
From          : 10.30.1.4
Adm State     : Up
LSP Up Time   : 0d 01:47:02
Transitions   : 11
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF          : Enabled
Metric        : 0
Include Grps  :
None
Least Fill    : Disabled
LdpOverRsvp   : Enabled
IGP Shortcut  : Enabled
Oper Metric   : 1001

LSP Tunnel ID : 1
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 11
Retry Timer    : 30 sec
Resv. Style   : SE
Negotiated MTU : 1500
ClassType     : 0
Oper FR       : Disabled
ADSPEC        : Disabled
Use TE metric : Disabled
Exclude Grps  :
None

VprnAutoBind  : Enabled

Primary(a)    : to_10_30_1_1
Bandwidth     : 0 Mbps
Up Time       : 0d 01:47:02
=====
*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
From          : 0.0.0.0
Adm State     : Down
LSP Up Time   : 0d 00:00:00
Transitions   : 0
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF          : Disabled
Metric        : 0

LSP Tunnel ID : 1
Oper State    : Down
LSP Down Time : 0d 00:00:07
Path Changes  : 0
Retry Timer    : 30 sec
Resv. Style   : SE
Negotiated MTU : 0
ClassType     : 0
Oper FR       : Disabled
ADSPEC        : Disabled
```

```

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

+ 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  : bfdTempl
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 178: Output fields: MPLS LSP path](#) 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           L - Loose
  S - Strict
  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
From          : 10.20.1.1
Adm State     : Up
Path Name     : 1
Path Admin    : Up
OutInterface  : 1/1/1
Path Up Time  : 0d 00:00:05
Retry Limit   : 0
RetryAttempt  : 0

Path LSP ID   : 30208
To            : 10.20.1.6
Oper State    : Up
Path Type     : Primary
Path Oper     : Up
Out Label     : 131071
Path Dn Time  : 0d 00:00:00
Retry Timer   : 30 sec
NextRetryIn   : 0 sec

Adspec       : Disabled
CSPF          : Enabled
Least Fill   : Disabled
FRR           : Enabled
FRR NodePro* : Enabled
FR Hop Limit : 16
FR Prop Adm* : Disabled
Prop Adm Grp : Disabled
Inter-area   : False

Oper Adspec   : Disabled
Oper CSPF     : Enabled
Oper LeastF*  : Disabled
Oper FRR      : Enabled
Oper FRR NP   : Enabled
Oper FRHopL*  : 16
Oper FRProp*  : Disabled
Oper PropAG   : Disabled

Neg MTU       : 1496
Bandwidth     : No Reservation
Hop Limit     : 255
Record Route  : Record
Record Label  : Record
SetupPrior*   : 7
Hold Prior*   : 0
Class Type    : 0
Backup CT     : None
MainCT Retry  : n/a
Rem           :
MainCT Retry  : 0
Limit        :
Include Grps  :
None
Exclude Grps :
None

Oper MTU      : 1496
Oper Bw       : 0 Mbps
Oper HopLim*  : 255
Oper RecRou*  : Record
Oper RecLab*  : Record
Oper SetupP*  : 7
Oper HoldPr*  : 0
Oper CT       : 0

Adaptive      : Enabled
Preference    : n/a
Path Trans    : 1
Failure Code  : noError
ExplicitHops  :
  No Hops Specified
Actual Hops   :

Oper InclGr*  :
None
Oper ExclGr*  :
None

Oper Metric   : 3000
CSPF Queries  : 1
Failure Node  : n/a

```

```

    10.20.1.1, If Index : 2 @ n
-> 10.20.1.2, If Index : 2 @ n
-> 10.20.1.4, If Index : 2
-> 10.20.1.6, If Index : 2
Record Label      : N/A
Record Label      : 131071
Record Label      : 131071
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
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    : 3
Failure Code   : noError
Failure Node  : n/a
Explicit Hops  :
  No Hops Specified
Actual Hops    :
  10.10.2.3(10.20.1.3)
  -> 10.10.2.1(10.20.1.1)
  -> 10.10.1.2(10.20.1.2)
  -> 10.10.4.4(10.20.1.4)
  -> 10.10.9.6(10.20.1.6)
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

Oper MTU      : 1500
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      : 100
CSPF Queries     : 0

Record Label      : N/A
Record Label      : 524248
Record Label      : 524246
Record Label      : 524246
Record Label      : 524248

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
SetupPriorit : 4                           Hold Priorit: 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
-> 10.10.105.4(10.20.1.4)                    Record Label : N/A
ComputedHops  :                             10.10.105.2 -> 10.10.105.4
ResigEligib*  : False                       Record Label : 124809
LastResignal  : n/a                          CSPF Metric : 1000
In Prog MBB   :                             NextRetryIn : 19 sec
MBB Type      : SoftPreemption                RetryAttempt: 0
Started At    : 12/08/2008 22:21:11           Failure Node: n/a
FailureCode   : noError
=====

```

*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 178: Output fields: MPLS LSP path](#) 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	Ping Interval	: 60
Enable	: False	State	: notApplicable
WaitForUpTimer	: 4 sec	OperWaitForUpTimer	: N/A
WaitForUpTmLeft	: 0 sec		
Adspec	: Enabled	Oper Adspec	: Enabled
PathCompMethod	: local-cspf	OperPathCompMethod	: local-cspf
MetricType	: te	Oper MetricType	: te
Least Fill	: Disabled	Oper LeastFill	: Disabled
FRR	: Enabled	Oper FRR	: Enabled
FRR NodeProtect	: Enabled	Oper FRR NP	: Enabled
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 Report	: Disabled+	Oper PCE Report	: Disabled
PCE Control	: Disabled	Oper PCE Control	: Disabled
PCE Update ID	: 0		
Neg MTU	: 1496	Oper MTU	: 1496
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	: 16777215
Preference	: n/a		
Path Trans	: 1	CSPF Queries	: 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	Record Label	: N/A
	toA.Dut-C.nokia.com		
	(toC.system.nokia.com)		
->	10.10.2.1(10.20.1.1) @ n	Record Label	: 524281
	10.10.2.1		
	(Dut-A.nokia.com)		
->	10.10.1.2(10.20.1.2) @ n	Record Label	: 524281
	toA.Dut-B.nokia.com		

```
(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 176: Output fields: MPLS LSP

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 none indicates that no failure has occurred. See "LSP Failure Codes" in the <i>7705 SAR Gen 2 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 none .
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 177: Output fields: LSP detail

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"> • none – no adjustment has occurred • manual • adj-count • overflow
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 config>router>mpls>lsp-self-ping>rsvp-te
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 178: Output fields: MPLS LSP path

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

7705 SAR Gen 2

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

7705 SAR Gen 2

13.40 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

7705 SAR Gen 2

Output

LSP-DB Output

Table 179: Output fields: LSP-DB 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 179: Output fields: LSP-DB

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.

13.41 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

7705 SAR Gen 2

Output

The following example shows the LSP history output, and [Table 180: Output fields: MPLS LSP history](#) 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 180: Output fields: MPLS LSP history

Label	Description
Info	Specifies whether the LSP history event recording is enabled or disabled

Label	Description
LSP	Specifies the name of the LSP
Hist Log	Specifies the size of the history log
Last Entry	Specifies the number of entries

lsp-history

Syntax

lsp-history [*lsp-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

lsp-name
Specifies the LSP name, up to 64 characters.

Platforms

7705 SAR Gen 2

13.42 lsp-template

lsp-template

Syntax

lsp-template [*lsp-template-name*] [**detail**]
lsp-template [*lsp-template-name*] **bindings**

Context

[\[Tree\]](#) (show>router>mpls lsp-template)

Full Context

show router mpls lsp-template

Description

This command displays MPLS LSP template information.

Parameters

- lsp-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

7705 SAR Gen 2

Output

The following outputs are examples of LSP template information, and [Table 181: Output fields: LSP template](#) 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
Hop Limit           : 255
Use TE metric       : Disabled
Exclude Groups      :
None
Record Label        : 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

```

```
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

```

```
Admin Tags      : None
```

```
=====
+ indicates inherited values
```

```
*A:Dut-C# show router mpls lsp-template detail
```

```
=====
MPLS LSP Templates (Detail)
```

```
LSP Template : ipmsi
```

```

-----
Type           : P2MP              Admin State    : Up
Default Path    : path_ipmsi      Adaptive       : Enabled
Bandwidth       : 0 Mbps
CSPF            : Enabled
Include Groups  :
None
FastReroute     : Enabled
FR Method       : Facility
Record Route    : Record
Retry Limit     : 0
LSP Count       : 3
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    Admin State         : Up
From                : 10.20.1.1+
Default Path        : toC
Bandwidth           : 0 Mbps              Hop Limit           : 255
PathCompMethod      : pce                 Metric Type          : igp
Local Sr Protection : preferred            Label Stack Reduct* : Disabled
Include Groups      :                     Exclude 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
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+             Override Tunnel ELC  : Disabled
PCE Report           : Enabled

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 181: Output fields: LSP template

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.

Label	Description
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.
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.

Label	Description
FallbkPathComp	none — No fallback method is configured. local-cspf— Local CSPF fallback is configured.

13.43 lspinfo

lspinfo

Syntax

lspinfo [*lsp-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

7705 SAR Gen 2

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  ClassType 0  Metric 0  OperMetric 2000
LDPoRsvp 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 ClassType 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
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 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 CSPF 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
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 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 0amNoRsrc 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
```

14 m Commands

14.1 mac

```
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

```
7705 SAR Gen 2
```

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 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
7705 SAR Gen 2

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

7705 SAR Gen 2

14.2 mac-filter

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

7705 SAR Gen 2

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#
```

14.3 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

7705 SAR Gen 2

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 182: Output fields: service MAC list describes show service MAC list output fields.

Table 182: Output fields: service MAC list

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.

14.4 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

7705 SAR Gen 2

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#
```

14.5 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

7705 SAR Gen 2

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
```

14.6 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

7705 SAR Gen 2

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#
```

14.7 macsec

macsec

Syntax

macsec

Context

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

Full Context

clear macsec

Description

Commands in this context clear MACsec information.

Platforms

7705 SAR Gen 2

macsec

Syntax

macsec

Context

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

Full Context

show macsec

Description

Commands in this context display MACsec information.

Platforms

7705 SAR Gen 2

macsec

Syntax

macsec

Context

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

Full Context

show router macsec

Description

This command displays router MACsec information.

Platforms

7705 SAR Gen 2

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
=====
```

14.8 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

7705 SAR Gen 2

14.9 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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.10 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.11 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

7705 SAR Gen 2

14.12 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

7705 SAR Gen 2

14.13 mapping-server

mapping-server

Syntax

mapping-server [prefix *ip-address[/mask]*] [*index index*] [*level leve/*] [**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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.14 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

7705 SAR Gen 2

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

14.15 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
7705 SAR Gen 2

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

7705 SAR Gen 2

14.16 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

7705 SAR Gen 2

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#
```

14.17 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 then 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

7705 SAR Gen 2

14.18 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 (eight 16-bit pieces)
 - 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

7705 SAR Gen 2

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: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

7705 SAR Gen 2

14.19 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 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

7705 SAR Gen 2

Output

Table 183: Output fields: MC-IPsec peer describes **show redundancy multi-chassis mc-ipsec** output fields.

Table 183: Output fields: MC-IPsec peer

Label	Description
Peer Name	The name of the peer.
Peer Addr	The IP address of the peer.

Label	Description
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 nominal or notReady . notReady means the system is not ready for a switchover. There could be major traffic impact if switchover happens in the case of notReady. nominal 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.
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

Label	Description
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

Context
[\[Tree\]](#) (tools>perform>redundancy>multi-chassis mc-ipsec)

Full Context
tools perform redundancy multi-chassis mc-ipsec

Description
Commands in this context provide mc-ipsec tools.

Platforms
7705 SAR Gen 2

14.20 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

7705 SAR Gen 2

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 184: Output fields: redundancy multi-chassis MC-lag peer](#) 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 184: Output fields: redundancy multi-chassis MC-lag peer

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 185: Output fields: redundancy multi-chassis MC-lag peer statistics](#) 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 185: Output fields: redundancy multi-chassis MC-lag peer statistics

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.
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.

Label	Description
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: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

7705 SAR Gen 2

14.21 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 186: Output fields: MC ring peer ring](#) describes the output fields for the **show redundancy multi-chassis mc-ring peer <ip-address> ring** command.

Table 186: Output fields: MC ring peer 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.

Label	Description
	<p>broken — The in-band control connection with the peer has timed out.</p> <p>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.</p> <p>testingRing — The in-band control connection with the peer is being set up. Waiting for result.</p> <p>waitingForPeer — Verifying if this ring is configured on the peer.</p> <p>configErr — The ring is administratively up, but a configuration error prevents it from operating properly.</p> <p>halfBroken — The in-band control connection indicates that the ring is broken in one direction (towards the peer).</p> <p>localBroken — The in-band control connection with the peer is known to be broken due to local failure or local administrative action.</p> <p>shutdown — The ring is shutdown.</p>
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 187: Output fields: MC ring peer statistics](#) describes the output fields for the **show redundancy multi-chassis mc-ring peer <ip-address> statistics** command.

Table 187: Output fields: MC ring peer 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 188: Output fields: MC ring node describes the output fields for the mc-ring ring-node command.

Table 188: Output fields: MC 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 189: Output fields: MC ring global statistics describes the output fields for the **show redundancy multi-chassis mc-ring global statistics** command.

Table 189: Output fields: 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.
Rx Unknown Ring	Displays the number of MC-ring signaling packets were received by this system that were related to an unknown ring.

Label	Description
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

7705 SAR Gen 2

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: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

7705 SAR Gen 2

14.22 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

7705 SAR Gen 2

14.23 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

7705 SAR Gen 2

14.24 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

7705 SAR Gen 2

14.25 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

7705 SAR Gen 2

14.26 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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.27 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

7705 SAR Gen 2

14.28 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

7705 SAR Gen 2

14.29 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

7705 SAR Gen 2

Output

The following output is an example of QoS md-auto-id information, and [Table 190: Output fields: MD auto ID QoS](#) 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 190: Output fields: MD auto ID QoS

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

7705 SAR Gen 2

Output

The following output is an example of **md-auto-id** filter information and [Table 191: Output fields: MD auto ID filter](#) 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 191: Output fields: MD auto ID filter

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

7705 SAR Gen 2

Output

The following output is an example of **md-auto-id** information, and [Table 192: Output fields: MD auto ID service](#) 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 192: Output fields: MD auto ID service

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.

14.30 mda

```
mda
```

Syntax

```
mda slot [/mda] [ detail]
```

Context

```
[Tree] (show mda)
```

Full Context

```
show mda
```

Description

This command displays MDA 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

7705 SAR Gen 2

Output

See the following output examples:

- [Output example: show mda](#)
- [Output Example: show mda <slot/mda> detail](#)
- [Output Fields: show mda <slot/mda> detail](#)

Output example: show mda

```
*A:node-2# show mda

=====
MDA Summary
=====
Slot  Mda  Provisioned Type           Admin   Operational
      Mda  Equipped Type (if different) State    State
-----
1      1    m10-sfp++6-sfp            up      up
      2    isa-tunnel-v              up      up
      3    isa-ms-v                  up      up
      3    isa-bb-v                  up      up
      3    isa-ms-v                  up      up
=====
```

Output Fields: show mda

[Table 193: Output fields: MDA](#) describes the output fields for the **show mda** command.

Table 193: Output fields: 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.

Label	Description
	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    m10-sfp++6-sfp             up      up

MDA Specific Data
  Maximum port/connector count : 16
  Num ports/connectors equipped : 16
  Capabilities                  : Ethernet
  Fail On Error                 : Disabled

Hardware Data
  Platform type                 : 7705
  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             : 2025/03/20 14:19:38
  Current alarm state           : alarm cleared
  Base MAC address              : a0:33:01:01:00:01
  Firmware version              : N/A
=====
```

Output Fields: show mda <slot/mda> detail

[Table 194: Output fields: MDA detail](#) describes the output fields for the **show mda <slot/mda> detail** command.

Table 194: Output fields: MDA detail

Label	Description
Slot	The chassis slot number.
Mda	The MDA slot number.
Provisioned Mda-type	The provisioned MDA type.

Label	Description
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 fail-on-error feature.
Egress XPL error window	The Egress XPL Error Window value used by the fail-on-error 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.

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.31 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

7705 SAR Gen 2

14.32 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

7705 SAR Gen 2

14.33 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

7705 SAR Gen 2

14.34 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:	esa-id/vm-id
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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
=====
```

14.35 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

7705 SAR Gen 2

Output

The following output is an example of memory pool information, and [Table 195: Output fields: memory pools](#) 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 195: Output fields: memory pools

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.
Total In Use	The sum of the In Use column.
Available Memory	The amount of available memory.

14.36 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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.37 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

<i>sdp-id</i>	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
7705 SAR Gen 2

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

7705 SAR Gen 2

14.38 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

7705 SAR Gen 2

Output

The following command displays multicast FIB information and [Table 196: Output fields: multicast FIB](#) 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 196: Output fields: multicast FIB](#) 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 196: Output fields: multicast FIB](#) describes the output fields.

```
show service id mfib ipv6
```

Output Example

=====				
Multicast FIB, Service 1				
=====				
Source Address	Group Address	Port Id	Svc Id	Fwd Blk

2001:db8:1000::1	ff0e:db8:1000::1	sap:1/1/1	Local	Fwd
		sap:1/1/2	Local	Fwd
2001:db8:1001::1	ff0e:db8:1001::1	sap:1/1/1	Local	Fwd
		sap:1/1/2	Local	Fwd

Number of entries: 2				

The following command displays multicast FIB statistics information and [Table 196: Output fields: multicast FIB](#) describes the output fields.

```
show service id mfib statistics
```

Output Example

=====			
Multicast FIB Statistics, Service 10000			
=====			
Source Address	Group Address	Matched Pkts	Matched Octets Forwarding Rate

10.0.0.4	239.0.0.4	10914	1069572
			24.696 kbps
*	* (mac)	0	0
			0.000 kbps

Number of entries: 2			
=====			

The following command shows which ISIDs are local and [Table 196: Output fields: multicast FIB](#) 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 196: Output fields: multicast FIB](#) 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 196: Output fields: multicast FIB](#) 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 196: Output fields: multicast FIB

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

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

7705 SAR Gen 2

14.39 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

7705 SAR Gen 2

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                                Ing
-Subs user2                                Egr
                                     FC be h2 h1 nc
-Subs user3                                Egr Ing
-Subs user4                                Ing
                                     1/1/2:1
                                     FC af ef nc
-Subs user5                                Egr
-Subs user6                                Egr Ing
                                     1/1/2:1
                                     FC be l2 af h2 ef nc
-Subs user7                                Ing
      IP 1.1.0.7                           FC l1 h2
-Subs user8                                Egr
      IP 1.1.0.8                           FC af l1 h2 ef nc
-Subs user9                                Egr Ing
      IP 1.1.0.9
-Subs user10                               Ing
                                     1/1/2:1
-Subs user11                               Egr
      MAC 00:00:01:00:00:01 FC be l2 l1 h1 nc
                                     1/1/2:1
-Subs user12                               Egr Ing
      MAC 00:00:01:00:00:02 FC be l1 h2 ef h1
                                     1/1/2:1
-Subs user13                               Ing
      MAC 00:00:01:00:00:03 FC be ef
                                     1/1/2:1
-Subs user14                               Egr
      IP 1.1.0.13 MAC 00:00:01:00:00:01 FC be ef h1
                                     1/1/2:1
-Subs user15                               Egr Ing
      IP 1.1.0.14 MAC 00:00:01:00:00:02
                                     1/1/2:1
-Subs user16                               Egr Ing
      IP 1.1.0.15 MAC 00:00:01:00:00:03 FC af l1 ef nc
-Subs user16                               Ing
      SLA sla1
-Subs user17                               Egr
      SLA sla2
-Subs user18                               Egr Ing
      SLA sla3
                                     FC be af h2
=====

```

A:EsRc#

[Table 197: Output fields: mirror](#) lists and describes the mirroring output fields:

Table 197: Output fields: mirror

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.
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 198: Output fields: mirror global sampling rate](#) 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 198: Output fields: mirror global sampling rate

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

14.40 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 17characters.
- detail**
Displays MACsec MKA session detailed information.

statistics

Displays MACsec MKA session statistical information.

Platforms

7705 SAR Gen 2

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 199: Output fields: MACsec MKA session port](#) describes the output fields for the following **show macsec mka-session port** command.

Table 199: Output fields: 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.

Label	Description
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            : 11223344556677889900aabbccddeeff11223344556677889900aabbcc*
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 200: Output fields: 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 200: Output fields: 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.

Label	Description
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).
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.

Label	Description
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.
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.

Label	Description
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            : 11223344556677889900aabbccddeeff11223344556677889900aabbcc*
MKA Member ID       : f134218784b114eb61dbe834
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

7705 SAR Gen 2

14.41 mld

mld

Syntax

mld

Context

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

Full Context

show router mld

Description

Commands in this context show MLD entities.

Platforms

7705 SAR Gen 2

mld

Syntax

mld

Context

[\[Tree\]](#) (clear>router mld)

Full Context

clear router mld

Description

Commands in this context clear and reset MLD entities.

Platforms

7705 SAR Gen 2

14.42 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

7705 SAR Gen 2

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

7705 SAR Gen 2

14.43 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

7705 SAR Gen 2

Output

The following output is an example of service MRRP MAC information.

Output Example

*A:PE-A# show service id 10 mmrp 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 mmrp 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#

14.44 monitor

monitor

Syntax

monitor

Context

[\[Tree\]](#) (monitor)

Full Context

monitor

Description

Commands in this context monitor statistics.

Platforms

7705 SAR Gen 2

14.45 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

7705 SAR Gen 2

```
mpls
```

Syntax

mpls

Context

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

Full Context

show router mpls

Description

Commands in this context display MPLS related information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

mpls

Syntax

mpls

Context

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

Full Context

tools perform router mpls

Description

This command enables tools for MPLS.

Platforms

7705 SAR Gen 2

mpls

Syntax

mpls

Context

[\[Tree\]](#) (monitor>router mpls)

Full Context

monitor router mpls

Description

This commands monitors commands for the MPLS instance.

Platforms

7705 SAR Gen 2

14.46 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

7705 SAR Gen 2

14.47 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

7705 SAR Gen 2

Output

The following output is an example of MPLS resource information, and [Table 201: 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 201: 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

14.48 mrouters

mrouters

Syntax

mrouters [detail]

Context

[Tree] (show>service>id>mld-snooping mrouters)

Full Context

show service id mld-snooping mrouters

Description

This command displays all multicast routers.

Platforms

7705 SAR Gen 2

Output

The following output is an example of service MLD snooping mrouter information.

Output Example

```
*A:rbae_C# show service id 1 mld-snooping mrouters
=====
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 mrouters: 1
=====
*A:rbae_C#

*A:rbae_C# show service id 1 mld-snooping mrouters 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

7705 SAR Gen 2

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 202: Output fields: [IGMP snooping multicast routers](#) describes the show igmp-snooping mrouter output fields:

Table 202: Output fields: IGMP snooping multicast routers

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

14.49 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

7705 SAR Gen 2

14.50 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

7705 SAR Gen 2

14.51 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 Ngbr 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:pcl#

```

Output Example: show redundancy multi-chassis sync peer <ip-address> detail

```

A:pcl# 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

7705 SAR Gen 2

14.52 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

7705 SAR Gen 2

Output

The following output is an example of IPsec multi-chassis shunt interfaces. [Table 203: Output fields: multi-chassis shunt interface](#) 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 203: Output fields: multi-chassis shunt interface

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

14.53 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

7705 SAR Gen 2

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-psmi    : false
spmsi              : rsvp SpmsiTemplate
s-psmi 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-psmi P2MP AdmSt   : Up
i-psmi Tunnel Name  : mpls-if-74217
Mdt-type            : sender-receiver

BSR signalling      : none
Wildcard s-psmi    : false
spmsi              : ldp
s-psmi 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-psmi P2MP AdmSt   : Up
i-psmi 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
s-pmsi              : ldp
s-pmsi P2MP AdmSt   : Up
max-p2mp-spmisi    : 5
data-delay-interval: 3 seconds
enable-asm-mdt      : N/A
data-threshold      : 224.0.0.0/4 --> 0 kbps
spmisi 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
```

14.54 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

7705 SAR Gen 2

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 Mvpns : 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 n Commands

15.1 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

7705 SAR Gen 2

```
nat
```

Syntax

```
nat
```

Context

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

Full Context

```
clear nat
```

Description

Commands in this context clear NAT commands.

Platforms

7705 SAR Gen 2

nat

Syntax

nat

Context

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

Full Context

show router nat

Description

Commands in this context display NAT related information.

Platforms

7705 SAR Gen 2

nat

Syntax

nat

Context

[\[Tree\]](#) (show>service nat)

Full Context

show service nat

Description

Commands in this context display NAT information.

Platforms

7705 SAR Gen 2

15.2 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

7705 SAR Gen 2

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_PPP0E#

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 unrecognised

[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 204: Output fields: CPM statistics

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 205: Output fields: ISA statistics

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 clear 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 clear 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 206: Output fields: ISA level statistics

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 207: Output fields: ISA member state

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

7705 SAR Gen 2

15.3 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

7705 SAR Gen 2

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
=====

```

15.4 nat-system-resources

nat-system-resources

Syntax

nat-system-resources mda *mda-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

<i>mda-id</i>			
Specifies the card and slot identifying a provisioned ISA.			
Values	mda-id:	slot [xiom]/mda	
		slot	1
		mda	1 to 3

<i>nat-group-id</i>	
Specifies the NAT group ID.	
Values	1 to 4

Platforms

7705 SAR Gen 2

15.5 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 lpipe 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 lpipe 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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

Table 208: Output fields: BGP neighbor 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               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    : 0
i/p Octets    : 0                o/p Octets      : 0
i/p Updates   : 0                o/p Updates     : 0
TTL Security  : Enabled           Min TTL Value    : 255
Graceful Restart : Disabled       Stale Routes Time: n/a
Egress Engineering : Enabled
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 Port        : 0
Local AS        : 100
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 Port        : 179
Local AS        : 100
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         Keep Alive    : 30
Active Hold Time: 0       Active Keep Alive: 0
Cluster Id   : None      Client Reflect: Enabled
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   : 0
i/p Octets   : 0         o/p Octets     : 0
i/p Updates  : 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. Time      : 02d07h16m
Hold Time          : 90
Min Hold Time      : 0
Active Hold Time   : 90
Cluster Id         : None
Preference         : 170
Input Queue        : 0
Input Messages     : 6671
Input Octets       : 132830
Input Updates      : 35
Input RtRefresh    : 0
Duplicate Prefixes : 0
As-path Loops      : 17
Originator-id Loops : 0
Upd Treat As Withdraw : 0
TTL Security       : Disabled
Graceful Restart   : Enabled
Restart Time       : 299
Long-Lived GR      : Disabled
Advertise Inactive : Disabled
Peer Tracking Policy : peerTracking
Nextthop Res Policy : pol-non-existing
Auth key chain     : n/a
Disable Cap Nego   : Disabled
Default Route Tgt  : Disabled
Aigp Metric        : Enabled
Damp Peer Oscillatio*: Disabled
GR Notification    : Enabled
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
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       : 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
Ebgp Label Pref     : 170
Tcp Mss             : 1024
Tcp Rcvd Mss        : 1024

Fsm Est. Trans      : 19
InUpd Elap. Time    : 02d09h04m
Keep Alive          : 30
Active Keep Alive    : 30
Client Reflect       : Enabled
Num of Update Flaps  : 12
Output Queue         : 0
Output Messages      : 6687
Output Octets        : 148304
Output Updates       : 51
Output RtRefresh     : 0
Duplicate Withdrawals : 0
Cluster-list Loops   : 0
As-confed Loops      : 0
Pfx Treat As Withdraw : 0
Min TTL Value        : n/a
Stale Routes Time    : 364
Peer Tracking        : Enabled
Bfd Enabled          : Enabled
Split Horizon         : Enabled
Update Errors         : 0
Fault Tolerance       : Disabled
SRv6 Route Advertise*: Disabled

```

```

Received Paths      : 30
Backup IPv4         : 0
Backup VPN-IPv4     : 0
Backup Label-IPv4   : 0
Backup IPv6         : 0
Backup VPN-IPv6     : 0
Backup Label-IPv6   : 0
-----
Ingress prefix counters per family.
IPv4 received       : 0
IPv4 active         : 0
IPv4 suppressed     : 0
IPv4 rejected       : 0
VPN-IPv4 received   : 0
VPN-IPv4 active     : 0
VPN-IPv4 suppressed : 0
VPN-IPv4 rejected   : 0
Label-IPv4 received : 59
Label-IPv4 active   : 17
Label-IPv4 suppressed: 0
Label-IPv4 rejected : 0
MVPN-IPv4 received  : 0
MVPN-IPv4 active    : 0
MVPN-IPv4 suppressed: 0
MVPN-IPv4 rejected  : 0
Mcast-IPv4 received : 16
Mcast-IPv4 active   : 0
Mcast-IPv4 suppressed: 0
Mcast-IPv4 rejected : 0
Mc-VPN-IPv4 received : 0
Mc-VPN-IPv4 active   : 0
Mc-VPN-IPv4 suppress*: 0
Mc-VPN-IPv4 rejected : 0
MDT-Safi received   : 0
MDT-Safi active     : 0
MDT-Safi suppressed : 0
MDT-Safi rejected   : 0
L2-VPN received     : 0
L2-VPN active       : 0
L2-VPN suppressed   : 0
L2-VPN rejected     : 0
Flow-IPv4 received   : 0
Flow-IPv4 active    : 0
Flow-IPv4 suppressed : 0
Flow-IPv4 rejected   : 0
MS-PW received      : 0
MS-PW active        : 0
MS-PW suppressed    : 0
MS-PW rejected      : 0
SRPLCY-IPV4 received : 0
SRPLCY-IPV4 active   : 0
SRPLCY-IPV4 suppress*: 0
SRPLCY-IPV4 rejected : 0
Flow-VPN-IPv4 receiv*: 0
Flow-VPN-IPv4 active : 0
Flow-VPN-IPv4 suppre*: 0
Flow-VPN-IPv4 reject*: 0
IPv6 received       : 70
IPv6 active         : 0
IPv6 suppressed     : 0
IPv6 rejected       : 0
VPN-IPv6 received   : 0
VPN-IPv6 active     : 0
VPN-IPv6 suppressed : 0
VPN-IPv6 rejected   : 0
Label-IPv6 received : 0
Label-IPv6 active   : 0
Label-IPv6 suppressed: 0
Label-IPv6 rejected : 0
MVPN-IPv6 received  : 0
MVPN-IPv6 active    : 0
MVPN-IPv6 suppressed: 0
MVPN-IPv6 rejected  : 0
Mcast-IPv6 received : 26
Mcast-IPv6 active   : 0
Mcast-IPv6 suppressed: 0
Mcast-IPv6 rejected : 0
Mc-VPN-IPv6 received : 0
Mc-VPN-IPv6 active   : 0
Mc-VPN-IPv6 suppress*: 0
Mc-VPN-IPv6 rejected : 0
RT-Constnt received : 0
RT-Constnt active   : 0
RT-Constnt suppress*: 0
RT-Constnt rejected : 0
EVPN received       : 0
EVPN active         : 0
EVPN suppressed     : 0
EVPN rejected       : 0
Flow-IPv6 received   : 0
Flow-IPv6 active    : 0
Flow-IPv6 suppressed : 0
Flow-IPv6 rejected   : 0
BGP-LS received     : 0
BGP-LS active       : 0
BGP-LS suppressed    : 0
BGP-LS rejected     : 0
SRPLCY-IPV6 received : 0
SRPLCY-IPV6 active   : 0
SRPLCY-IPV6 suppress*: 0
SRPLCY-IPV6 rejected : 0
Flow-VPN-IPv6 receiv*: 0
Flow-VPN-IPv6 active : 0
Flow-VPN-IPv6 suppre*: 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 208: Output fields: BGP neighbor

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.
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.

Label	Description
	Established — BGP has successfully established a peering and is exchanging routing information.
Last State	<p>Idle — The BGP peer is not accepting connections.</p> <p>Active — BGP is listening for and accepting TCP connections from this peer.</p> <p>Connect — BGP is attempting to establish a TCP connections from this peer.</p> <p>Open Sent — BGP has sent an OPEN message to the peer and is waiting for an OPEN message from the peer.</p> <p>Open Confirm — BGP has received a valid OPEN message from the peer and is awaiting a KEEPALIVE or NOTIFICATION.</p>
Last Event	<p>start — BGP has initialized the BGP neighbor.</p> <p>stop — BGP has disabled the BGP neighbor.</p> <p>open — BGP transport connection opened.</p> <p>close — BGP transport connection closed.</p> <p>openFail — BGP transport connection failed to open.</p> <p>error — BGP transport connection error.</p> <p>connectRetry — Connect retry timer expired.</p> <p>holdTime — Hold time timer expired.</p> <p>keepAlive — Keepalive timer expired.</p> <p>recvOpen — Receive an OPEN message.</p> <p>revKeepalive — Receive a KEEPALIVE message.</p> <p>recvUpdate — Receive an UPDATE message.</p> <p>recvNotify — Receive a NOTIFICATION message.</p> <p>None — No events have occurred.</p>
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.

Label	Description
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. 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.

Label	Description
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.
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 209: Output fields: standard and detailed BGP neighbor 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 Nextthop (Router) As-Path	LocalPref Path-Id	MED Label

u*>i	10.20.1.201/32	n/a	None
	1.101.201.201	238	-
	200		
*i	10.20.1.202/32	n/a	2000
	1.101.201.201	3752	-
	200		
u*>i	10.20.1.231/32	n/a	1000
	1.101.201.201	3751	-
	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 Nextthop (Router) As-Path	LocalPref Path-Id	MED Label

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 209: Output fields: standard and detailed BGP neighbor

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

Label	Description
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

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Output

The following output is an example of standard RIP group information, and [Table 210: Output fields: RIP neighbor](#) 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
-----
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 210: Output fields: RIP neighbor

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.

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 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 211: Output fields: RIP neighbor detail](#) 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 211: Output fields: RIP neighbor detail

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). 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.

Label	Description
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: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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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_NBRS_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_NBRS_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

7705 SAR Gen 2

Output

The following output is an example of a PIM neighbor configuration. [Table 212: Output fields: PIM neighbor](#) 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 212: Output fields: PIM neighbor

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
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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

Neighbor Output — The following output is an example of IPv6 neighbor information, and [Table 213: Output fields: neighbor](#) describes the fields.

Output Example

```
B:CORE2# show router neighbor
=====
Neighbor Table (Router: Base)
=====
IPv6 Address      State      Interface      Expiry      Type      RTR
MAC Address
-----
fe80::203:faff:fe78:5c88      STALE      net1_1_2      03h52m08s      Dynamic      Yes
00:16:4d:50:17:a3
fe80::203:faff:fe81:6888      STALE      net1_2_3      03h29m28s      Dynamic      Yes
00:03:fa:1a:79:22
-----
No. of Neighbor Entries: 2
=====
B:CORE2#
```

Table 213: Output fields: neighbor

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

Label	Description
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: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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 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#
*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

7705 SAR Gen 2

Output

Standard OSPF Neighbor Output

[Table 214: Output fields: OSPF neighbor](#) describes the standard command output fields for an OSPF neighbor.

Table 214: Output fields: OSPF neighbor

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	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 received from the neighbor, but that a more concerted effort should be made to contact the neighbor.

Label	Description
	<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.
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 215: Output fields: OSPF neighbor detail describes the detailed command output fields for an OSPF neighbor.

Table 215: Output fields: OSPF neighbor detail

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	<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>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>

Label	Description
	Full — In this state, the neighboring routers are fully adjacent. These adjacencies will now appear in router-LSAs and network-LSAs.
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.
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.

Label	Description
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 Packets       : 0
Option Mismatches: 0
Num Restarts      : 0
Bad MTUs          : 0
LSA not in LSDB   : 0
Nbr Duplicates    : 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
Designated Rtr    : 10.20.1.3
Neighbor State    : Full
Retrans Q Length  : 0
Events            : 5
Up Time           : 0d 00:11:01
GR Helper         : Not Helping
GR Exit Reason    : None
Bad Nbr States    : 1
Bad Seq Nums      : 0
Bad Packets       : 0
Option Mismatches: 0
Num Restarts      : 0
Adj SR SID        : Label 262138
Backup Desig Rtr  : 10.20.1.2
Priority           : 1
Options           : - E - - - 0 --
Last Event Time   : 05/27/2015 08:36:03
Time Before Dead  : 9 sec
GR Helper Age     : 0 sec
GR Restart Reason : Unknown
LSA Inst fails    : 0
Bad MTUs          : 0
LSA not in LSDB   : 0
Nbr Duplicates    : 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
Designated Rtr    : 10.20.1.5
Neighbor State    : Full
Retrans Q Length  : 0
Events            : 7
Up Time           : 0d 00:11:01
GR Helper         : Not Helping
GR Exit Reason    : None
Bad Nbr States    : 0
Bad Seq Nums      : 0
Bad Packets       : 0
Option Mismatches: 0
Num Restarts      : 0
Adj SR SID        : Label 262140
Backup Desig Rtr  : 10.20.1.3
Priority           : 1
Options           : - E - - - 0 --
Last Event Time   : 05/27/2015 08:36:04
Time Before Dead  : 8 sec
GR Helper Age     : 0 sec
GR Restart Reason : Unknown
LSA Inst fails    : 0
Bad MTUs          : 0
LSA not in LSDB   : 0
Nbr Duplicates    : 0
Last Restart at   : Never
=====
*A:Dut-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
Neighbor State    : Full
Retrans Q Length  : 0
Events            : 4
Up Time           : 1d 18:20:20
GR Helper         : Not Helping
GR Exit Reason    : None
Bad Nbr States    : 1
Bad Seq Nums      : 0
Bad Packets       : 0
Option Mismatches: 0
Num Restarts      : 0
Backup Desig Rtr  : 0.0.0.0
Priority           : 1
Options           : -E--0-
Last Event Time   : 05/06/2006 00:11:16
Time Before Dead  : 38 sec
GR Helper Age     : 0 sec
GR Restart Reason : Unknown
LSA Inst fails    : 0
Bad MTUs          : 0
LSA not in LSDB   : 0
Nbr Duplicates    : 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>ospf3 neighbor)

[Tree] (clear>router>ospf neighbor)

Full Context

clear router ospf3 neighbor

clear router ospf 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
                                           Update Timer: 1
Timeout Timer    : 5                      Flush Timer : 5
BFD              : Enabled
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
                                           Flush Timer  : 5
Timeout 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::10:10:12:0/120	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		
=====		

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 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: Rate)
-----
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: Rate)
-----
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#
```

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

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neighbor

Syntax

neighbor *neighbor* [*neighbor*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

Context

[\[Tree\]](#) (monitor>router>ripng neighbor)

[\[Tree\]](#) (monitor>router>rip neighbor)

Full Context

monitor router ripng neighbor

monitor router rip 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
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15.6 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

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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 216: Output fields: GSMP neighbors group

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

15.7 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

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Output

The following output is an example of NETCONF information, and [Table 217: Output fields: NETCONF](#) describes the NETCONF output fields.

Output Example

```
# show system netconf
=====
NETCONF Server
=====
Administrative State      : Enabled
Operational State        : Up
=====
```

Table 217: Output fields: NETCONF

Label	Description
Administrative State	Enabled — Indicates that NETCONF is enabled. Disabled — Indicates that NETCONF is disabled.
Operational State	Up — Indicates that NETCONF is operational. Down — Indicates that NETCONF has no connections present. Transition — Indicates that NETCONF is waiting for the delay-on-boot timer to expire.

The following output is an example of NETCONF connection information, and [Table 218: Output fields: NETCONF connection](#) describes the NETCONF connection output fields.

Output Example

```
# show system netconf connection
=====
NETCONF Server connections
=====
Connection      Username      Session Id      Status      Running Locked?      Candidate Locked?
-----
135.121.197.102  admin        56              connected   no             no
-----
Number of NETCONF sessions : 1
=====
```

Table 218: Output fields: NETCONF connection

Label	Description
Connection	The IP address of the connected routers (remote client).
Username	The name of the user.

Label	Description
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 219: Output fields: NETCONF counters](#) 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 219: Output fields: NETCONF counters

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 220: Output fields: NETCONF schema path](#) 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 220: Output fields: NETCONF schema path

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.

15.8 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

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Output

The following output is an example of network QoS Policy information, and [Table 221: Output fields: QoS network](#) 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
- DSCP Mapping
Out-of-Profile : ef
- Dot1p Mapping
Out-of-Profile : 5
- LSP EXP Bit Mapping
Out-of-Profile : 5
DE Mark       : None
Redirect Grp Q : None
FC Value      : 6
- DSCP Mapping
Out-of-Profile : nc1
- Dot1p Mapping
Out-of-Profile : 6
- LSP EXP Bit Mapping
Out-of-Profile : 6
DE Mark       : None
Redirect Grp Q : None
FC Value      : 7
- DSCP Mapping
Out-of-Profile : nc2
- Dot1p Mapping
Out-of-Profile : 7
- LSP EXP Bit Mapping
Out-of-Profile : 7
DE Mark       : None
Redirect Grp Q : None

-----
-----
Ingress Forwarding Class Mapping
-----
FC Value      : 0
Redirect UniCast Plcr : None
Redirect BroadCast Plcr : None
FC Value      : 1
Redirect UniCast Plcr : None
Redirect BroadCast Plcr : None
FC Value      : 2
Redirect UniCast Plcr : None
Redirect BroadCast Plcr : None
FC Value      : 3
Redirect UniCast Plcr : None
Redirect BroadCast Plcr : None
FC Value      : 4
Redirect UniCast Plcr : None
Redirect BroadCast Plcr : None
FC Name       : ef
In-Profile    : ef
FC Name       : h1
In-Profile    : nc1
FC Name       : nc
In-Profile    : nc2
FC Name       : l2
In-Profile    : l1
FC Name       : h2
In-Profile    : h2
In-Profile    : 5
In-Profile    : 5
In-Profile    : 6
In-Profile    : 6
In-Profile    : 7
In-Profile    : 7
Redirect Grp Plcr: None
Redirect Grp Plcr: None
Redirect Grp Plcr: None
Redirect Grp Plcr: None
Redirect Grp Plcr: None
Redirect Grp Plcr: None
Redirect MultiCast Plcr : None
Redirect Unknown Plcr  : None
Redirect MultiCast Plcr : None
Redirect Unknown Plcr  : None
Redirect MultiCast Plcr : None
Redirect Unknown Plcr  : None
Redirect MultiCast Plcr : None
Redirect Unknown Plcr  : None
Redirect MultiCast 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 221: Output fields: QoS network

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

Label	Description
	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 network ingress default-action command) assigned to packets for which there is no other configured forwarding class classification.
Profile	Specifies the default ingress packet profile (configured using the network ingress default-action 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.
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.

15.9 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

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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#
```

15.10 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

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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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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	CIR Level/Weight	: n/a
PIR 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		

3HE 21566 AAAB TQZZA 01

```

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 Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False
Queue-Id      : 16
PIR           : 100
PIR Rule      : closest
HS Class Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False
HS Wrr Weight : 1
HS MBS        : 100.00
-----
HS Wrr Group Information
-----
HS Wrr Group Id : 1
Percent Rate    : 100
Class Weight    : 1
PIR Adaptation Rule: closest
HS Wrr Group Id : 2
Percent Rate    : 100
Class Weight    : 1
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#
```

15.11 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: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

Keyword to display the longer, more detailed version of the output.

service-id service-id

Specifies the service ID.

Values 1 to 2147483647

Platforms

7705 SAR Gen 2

Output

The following outputs are examples of BGP next-hop information:

- [Output example, Table 222: Output fields: BGP nexthop](#)
- [Output example, Table 223: Output fields: BGP detailed next hop](#)
- [Output example, Table 224: Output fields: BGP next hop](#)
- [Output example, Table 224: Output fields: BGP next hop](#)
- [Output example, Table 224: Output fields: BGP next hop](#)

• [Output example, Table 224: Output fields: BGP next hop](#)

The following output is an example of BGP next-hop information that displays the next-hop resolution enforcement of the administrative-tag policy, and [Table 222: Output fields: BGP nexthop](#) describes the output fields.

Output example

```
A:node-2# show router bgp next-hop vpn-ipv4
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====

BGP VPN Next Hop
=====
VPN Next Hop      Owner
Autobind          Reason
Labels (User-labels)  FlexAlgo Metric
Admin-tag-policy (enforcement)  Last Mod.
-----
10.20.1.1         RSVP
  rsvp sr-te      Y
  -- (2)          -- 10
  rtAdmTagPoll (strict-tagged strict-untagged)  01h55m49s
-----
Next Hops : 4
=====
```

Table 222: Output fields: BGP nexthop

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, the value is the same as the AS
VPN Next Hop	The next-hop address
Owner	The routing protocol used to derive the best next hop
Autobind	The autobind status for VPRN autobind
FibProg	The status of the FIB: <ul style="list-style-type: none">y – FIB is programmedn – FIB is not programmed
Reason	The reason
Labels (User-labels)	The labels and user labels
FlexAlgo	The status of flexible algorithms: <ul style="list-style-type: none">y – flexible algorithms are configured

Label	Description
	<ul style="list-style-type: none"> n – flexible algorithms are not configured
Admin-tag-policy (enforcement)	The administrative tag policy and the next-hop resolution enforcement of the administrative tag policy
Metric	The number of routes using the resolving prefix
Last Mod.	The time elapsed since the next hop was modified
Next Hops	The number of next hops

The following output is a detailed example of BGP next-hop information that displays the next-hop resolution enforcement of the administrative-tag policy, and [Table 223: Output fields: BGP detailed next hop](#) describes the output fields.

Output example

```
A:node-2# show router bgp next-hop vpn-ipv4 10.20.1.2 detail
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====

BGP VPN Next Hop
=====
-----
VPN Next Hop      : 10.20.1.2
Autobind          : rsvp sr-te
Labels           : --
User-labels      : 2
Admin-tag-policy  : rtAdmTagPoll
Enforcement: strict-tagged strict-untagged
Color            : --
Created          : 01h56m03s
Last-modified    : 01h55m53s
-----
Resolving Prefix : 10.20.1.2/32
Preference       : 7
Reference Count  : 2
Fib Programmed  : Y
Resolved Next Hop: 1.3.2.2
Egress Label    : 524273
Metric          : 10
Owner           : RSVP
TunnelId        : 3
-----
Next Hops : 2
=====
```

Table 223: Output fields: BGP detailed next hop

Label	Description
BGP Router ID	The local BGP router ID
AS	The configured autonomous system number

Label	Description
Local AS	The configured local AS setting. If not configured, the value is the same as the AS.
VPN Next Hop	The next-hop address
Autobind	The autobind service configured
Labels	The labels
User-labels	The user labels
Admin-tag-policy	The name of the administrative policy configured
Enforcement	The configured enforcement
Color	The configured color
Created	The time elapsed since the next hop was created
Last-modified	The time elapsed since the next hop was modified
Resolving prefix	The prefix of the best next hop
Preference	The BGP preference attribute for the routes
Metric	The IGP cost to reach the BGP next hop
Reference Count	The number of routes using the resolving prefix
Owner	The routing protocol used to derive the best next hop
Fib Programmed	The status of the FIB: <ul style="list-style-type: none"> y – FIB is programmed n – FIB is not programmed
Resolved Next Hop	The resolved next hop
Egress Label	The egress label
TunnelId	The tunnel ID
Next Hops	The number of next hops

The following output is an example of BGP next-hop information, and [Table 224: Output fields: BGP next hop](#) describes the command output fields for a BGP next hop.

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	Metric	: 10
Reference Count	: 1	Owner	: OSPF
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	Metric	: 10
Reference Count	: 1	Owner	: BGP (OSPF)
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)	--
-- (N)	10
	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 224: Output fields: BGP next hop

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.

Label	Description
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.

15.12 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
7705 SAR Gen 2

15.13 nsp-proxy

nsp-proxy

Syntax
nsp-proxy

Context
[\[Tree\]](#) (tools>perform>system nsp-proxy)

Full Context
tools perform system nsp-proxy

Description

Commands in this context perform NSP proxy functions.

Platforms

7705 SAR Gen 2

nsp-proxy

Syntax

nsp-proxy [detail] module {bmp | pce | rom | topo} db {active | standby}
nsp-proxy [detail]
nsp-proxy [detail] module {bmp | pce | rom | topo}

Context

[\[Tree\]](#) (tools>dump>system nsp-proxy)

Full Context

tools dump system nsp-proxy

Description

This command displays system NSP proxy information.

Parameters

- detail**
Keyword to display detailed information
- module**
Keyword to specify the module.

Values
bmp — Displays information about the BMP module.
pce — Displays information about the PCE module.
rom — Displays information about the ROM module.
topo — Displays information about the topology module.
- db**
Keyword to specify the database.

Values
active — Displays information about the active database.
standby — Displays information about the standby database.

Platforms

7705 SAR Gen 2

15.14 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.

- 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

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
7705 SAR Gen 2

Output
The following output is an example of NTP information, and [Table 225: Output fields: NTP](#) 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      Reference ID  St Type  A  Poll Reach  Offset(ms)
Router      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 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 225: Output fields: NTP

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
Type	bcast — broadcast interface mcast — multicast interface bcInt — broadcast client svr — server

Label	Description
	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	<p>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.</p> <p>Invalid — The peer is not maintaining an accurate clock. This peer will not be used for synchronization.</p> <p>Excess — The peer's synchronization distance is greater than ten other peers. This peer will not be used for synchronization.</p> <p>Outlier — The peer is discarded as an outlier. This peer will not be used for synchronization.</p> <p>Candidate — The peer is accepted as a possible source of synchronization.</p> <p>Selected — The peer is an acceptable source of synchronization, but its synchronization distance is greater than six other peers.</p> <p>Chosen — The peer is chosen as the source of synchronization.</p> <p>ChosenPPS — The peer is chosen as the source of synchronization, but the actual synchronization is occurring from a pulse-per-second (PPS) signal.</p>
Remote	The IP address of the remote NTP server or peer with which this local host is exchanging NTP packets
Reference ID	<p>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:</p> <p>Peer Codes:</p> <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>

Label	Description
	<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>
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

15.15 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.

Values		
esa-vm:	esa-id/vm-id	
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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-0ID TUNNEL-TYPE ALL
-----
CURRENT STATISTIC INFO
-----
0ID: 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
=====
```

16 o Commands

16.1 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
7705 SAR Gen 2

Output
The following output is an example of OAM configuration information and [Table 226: Output fields: OAM configuration summary](#) 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 226: Output fields: OAM configuration summary](#) 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 226: Output fields: OAM configuration summary](#) 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 226: Output fields: OAM configuration summary

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

16.2 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

16.3 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

16.4 ocsp-cache

ocsp-cache

Syntax

ocsp-cache [*entry-id*]

Context

[\[Tree\]](#) (show>certificate ocsp-cache)

Full Context

show certificate ocsf-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

7705 SAR Gen 2

16.5 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 state paths supporting gRPC ON_CHANGE subscriptions. The keywords **open-config** and **nokia** specify which model should be displayed in the output.

Parameters

open-config

Specifies that the OpenConfig models will be displayed.

nokia

Specifies that the Nokia models will be displayed.

Platforms

7705 SAR Gen 2

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/mps/lsp/oper-state
/state/router/mps/lsp/primary/mbb/last-mbb/type
/state/router/mps/lsp/primary/mbb/last-mbb/end-time
/state/router/mps/lsp/primary/mbb/last-mbb/metric
/state/router/mps/lsp/primary/mbb/last-mbb/state
/state/router/mps/lsp/primary/mbb/last-mbb/signaled-bw
/state/router/mps/lsp/secondary/mbb/last-mbb/type
/state/router/mps/lsp/secondary/mbb/last-mbb/end-time
/state/router/mps/lsp/secondary/mbb/last-mbb/metric
/state/router/mps/lsp/secondary/mbb/last-mbb/state
/state/router/mps/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
=====
```

16.6 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

7705 SAR Gen 2

Output

OSPF Opaque Database Output

[Table 227: Output fields: OSPF opaque database](#) describes the OSPF opaque database output fields.

Table 227: Output fields: OSPF opaque database

Label	Description
Area Id	A 32-bit integer uniquely identifying an area. Area ID 0.0.0.0 is used for the OSPF backbone.

Label	Description
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 0xdefeff
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       : 0x800000028      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       : 0x80000000d      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       : 0x800000002      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#

```

16.7 oper-group

oper-group

Syntax

oper-group [*group-name*]

oper-group [*group-name*] **detail**

oper-group [*group-name*] **members** [**sap**] [**sdp**] [**site**] [**egr-vtep**] [**service**] [**bgp-evpn**] [**ethernet-segment**] [**port**] [**vrrp**]

oper-group [*group-name*] **monitoring** [**sap**] [**sdp**] [**site**] [**srrp**] [**mvrp**] [**pw-port**] [**up-resiliency**] [**sap-mep**]

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, egr-vtep, service, bgp-evpn, ethernet-segment, port, vrrp

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, srrp, mvrp, pw-port, up-resiliency, sap-mep

Platforms

7705 SAR Gen 2

Output

The following output is an example of server oper group information. [Table 228: Output fields: operational group detail](#) 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/Stdbby
-----
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
=====

show service oper-group "g-1" detail
=====
Service Oper Group Information
=====
Oper Group      : g-1
Creation Origin  : manual
Hold DownTime   : 0 secs
Members         : 1
Oper Status: up
Hold UpTime: 0 secs
Monitoring : 2
=====

Monitoring SAP-MEPs for OperGroup: abcdefg
=====
Sap SvcId Md-index  Ma-index  MepId      Defect Admin Oper
-----
md-admin-name
ma-admin-name
-----
1/1/1:123  10 1      2      1      ----- Up  Up
oper
vpls-1-L2
-----
SAP-MEP Entries found: 1
=====
```

Table 228: Output fields: operational group detail

Label	Description
PortId	The port ID being monitored.

Label	Description
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/Stdbby	Displays whether the LAG is active or standby.
Sap	Displays the associated SAP ID
Md-index	Displays the Maintenance Domain (MD) index
Ma-index	Displays the Maintenance Association (MA) index

Label	Description
MepId	Displays the integer that is unique among all MEPs in the same MA
Defect	Displays the defects for the local MEP
md-admin-name	Displays the administrative MD name
ma-admin-name	Displays the administrative MA name

16.8 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

7705 SAR Gen 2

16.9 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

7705 SAR Gen 2

origin-validation

Syntax

origin-validation rpki-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	[-interface]
	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

7705 SAR Gen 2

16.10 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

ospf

Syntax

ospf

Context

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

Full Context

show ospf

Description

This command displays OSPFv2 related information for all instances.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

```
ospf
```

Syntax

ospf

Context

[\[Tree\]](#) (tools>perform>router ospf)

Full Context

tools perform router ospf

Description

Commands in this context perform OSPFv2 tasks.

Platforms

7705 SAR Gen 2

```
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

7705 SAR Gen 2

16.11 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

ospf3

Syntax

ospf3

Context

[\[Tree\]](#) (show ospf3)

Full Context

show ospf3

Description

This command displays OSPFv3 related information for all instances.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

16.12 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 *7705 SAR Gen 2 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

7705 SAR Gen 2

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

7705 SAR Gen 2

overload

Syntax

overload {rtm | fib | rtr-adv-lsa-limit}

Context

[\[Tree\]](#) (clear>router>ospf overload)

[\[Tree\]](#) (clear>router>ospf3 overload)

Full Context

clear router ospf overload

clear router ospf3 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

7705 SAR Gen 2

17 p Commands

17.1 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
7705 SAR Gen 2

Output
LDP Parameters Output
[Table 229: Output fields: LDP parameters](#) describes the LDP parameters output fields.

Table 229: Output fields: LDP parameters

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.

Label	Description
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. 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.

Label	Description
	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	<p>none — Loop detection is not supported on this router. This is the only valid value because Path Vector based loop detection is not supported.</p> <p>other — Loop detection is supported but by a method other than hopCount, path Vector, or hopCountAndPathVector.</p> <p>hopCount — Loop detection is supported by hop count only.</p> <p>pathVector — Loop detection is supported by path vector only.</p> <p>hopCountAndPathVector — Loop detection is supported by both path vector and hop count.</p>
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.
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	<p>Enabled — Authentication using MD5 message based digest protocol is enabled.</p> <p>Disabled — No authentication is used.</p>
Passive-Mode	<p>true — LDP responds only when it gets a connect request from a peer and does not attempt to actively connect to its neighbors.</p> <p>false — LDP actively tries to connect to its peers.</p>
Targeted-Sessions	<p>true — Targeted sessions are enabled.</p> <p>false — Targeted sessions are disabled.</p>

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#
```

17.2 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
7705 SAR Gen 2

Output

The following output is an example of password options information, and [Table 230: Output fields: password options](#) 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 230: Output fields: password options

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 time .
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.

Label	Description
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.
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

7705 SAR Gen 2

Output

The following output is an example of password option information.

[Table 231: Output fields: password options](#) 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 231: Output fields: password options

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 authentication section.
Minimum password length	Displays the minimum number of characters required in the password.

17.3 path

path

Syntax

```
path [path-name] [lsp-binding]
path path-name p2mp-lsp-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.
- lsp-binding**
Displays binding information.
- p2mp-lsp-binding**
Displays binding information.

Platforms

7705 SAR Gen 2

Output

The following output is an example of MPLS path information.
[Table 232: Output fields: MPLS path](#) describes MPLS Path output fields.

Table 232: Output fields: MPLS path

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.

Label	Description
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_2	Primary
	Up	to_10_30_1_1_cspf_3	Primary
Up to_10_30_1_1_cspf_16		Primary	
	Up	to_10_30_1_1_cspf_17	Primary
	Up	to_10_30_1_1_cspf_18	Primary
	Up	to_10_30_1_1_cspf_19	Primary
	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_2	Primary
	Up	to_10_30_1_2_cspf_3	Primary

```
Up    to_10_30_1_2_cspf_4      Primary
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_2      Primary
                        Down to_10_100_1_1_cspf_3      Primary
                        Down to_10_100_1_1_cspf_4      Primary
                        Down to_10_100_1_1_cspf_5      Primary
                        Down to_10_100_1_1_cspf_6      Primary
Down to_10_100_1_1_cspf_13      Primary
                        Down to_10_100_1_1_cspf_14      Primary
                        Down to_10_100_1_1_cspf_15      Primary
                        Down to_10_100_1_1_cspf_16      Primary
                        Down to_10_100_1_1_cspf_17      Primary
                        Down to_10_100_1_1_cspf_18      Primary
                        Down to_10_100_1_1_cspf_19      Primary
                        Down to_10_100_1_1_cspf_20      Primary
-----
Paths : 11
=====
*A:SRU4>config>router>mpls#
```

17.4 path-request

path-request

Syntax
`path-request [lsp-type lsp-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
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

detail

Specifies detailed information.

Platforms

7705 SAR Gen 2

17.5 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

7705 SAR Gen 2

Output

The following output is an example of BGP path information. [Table 233: Output fields: BGP path](#) 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 233: Output fields: BGP path

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.

17.6 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

7705 SAR Gen 2

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 234: Output fields: PCAP

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.

17.7 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
7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

17.8 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

7705 SAR Gen 2

17.9 pcep

pcep

Syntax

pcep

Context

[\[Tree\]](#) (clear>router pcep)

Full Context

clear router pcep

Description

Commands in this context clear PCEP related data.

Platforms

7705 SAR Gen 2

pcep

Syntax

pcep

Context

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

Full Context

show router pcep

Description

Commands in this context display PCEP related information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

17.10 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

7705 SAR Gen 2

17.11 peer

```
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

7705 SAR Gen 2

Output

Table 235: Output fields: RIP peer describes the command output fields for a RIP peer.

Table 235: Output fields: RIP peer

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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

Output

PCEP Peer Output

Table 236: Output fields: PCEP peer 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 236: Output fields: PCEP peer

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.

Label	Description
Session Establish Time	Specifies the session establish time.
Oper Keepalive	Specifies the operational keepalive value.
Oper DeadTimer	Specifies the operational dead timer value.

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: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

7705 SAR Gen 2

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

7705 SAR Gen 2

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  ripNg-v1   0
  one
fe80::6629:ffff:fe00:0  ripNg-v1   0
  two
fe80::6629:ffff:fe00:0  ripNg-v1   0
  three
fe80::6629:ffff:fe00:0  ripNg-v1   0
  four
-----
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  ripNg-v1   0
  one
-----
No. of Peers: 1
=====
```

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

7705 SAR Gen 2

17.12 perform

perform

Syntax

perform

Context

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

Full Context

tools perform

Description

Commands in this context perform troubleshooting operations.

Platforms

7705 SAR Gen 2

17.13 persistence

persistence

Syntax

persistence

Context

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

Full Context

tools perform persistence

Description

Commands in this context configure downgrade parameters.

Platforms

7705 SAR Gen 2

17.14 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

7705 SAR Gen 2

17.15 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

7705 SAR Gen 2

pim

Syntax

pim

Context

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

Full Context

show router pim

Description

Commands in this context display PIM related information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

pim

Syntax

pim

Context

[\[Tree\]](#) (monitor>router pim)

Full Context

monitor router pim

Description

This command monitors commands for the PIM instance.

Platforms

7705 SAR Gen 2

17.16 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

7705 SAR Gen 2

17.17 policer

```
policer
```

Syntax

```
policer
```

Context

[\[Tree\]](#) (show>qos policer)

Full Context

```
show qos policer
```

Description

Commands in this context display QoS policer information.

Platforms

7705 SAR Gen 2

17.18 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

7705 SAR Gen 2

17.19 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

7705 SAR Gen 2

17.20 policy

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

7705 SAR Gen 2

Output

Table 237: Output fields: route policy 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 237: Output fields: route policy

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

7705 SAR Gen 2

Output

VRRP Policy Output — The following output is an example of VRRP policy information, and [Table 238: Output fields: VRRP policy](#) describes the fields.

Table 238: Output fields: VRRP policy

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

Label	Description
	<p>priority to give the current in-use priority for the VRRP virtual router instances to which the policy is applied</p> <p>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</p> <p>Explicit events override all delta events; when multiple explicit events occur simultaneously, the event with the lowest priority value defines the in-use priority</p>
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	<p>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</p> <p>If the delta priority event is cleared, the <i>priority-level</i> is no longer used in the in-use priority calculation</p>
	<p>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 explicit priority event is set with a lower <i>priority-level</i></p> <p>The set explicit 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</p>
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 239: Output fields: VRRP policy event](#) 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          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          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 239: Output fields: VRRP policy event

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

Label	Description
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
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	<p>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</p> <p>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</p>
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

Label	Description
	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 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 delta 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 explicit priority event is set with a lower <i>priority-level</i> The set explicit 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

Label	Description
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)

Full Context

show system security dist-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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of policy association information, and [Table 240: Output fields: policy association](#) 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 240: Output fields: policy association

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.

17.21 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

7705 SAR Gen 2

17.22 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

7705 SAR Gen 2

Output

The following output is an example of policy test information, and [Table 241: Output fields: policy test field](#) 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    VPNLabel
      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
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    : 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
Nexthop      : 220.0.0.2
Path Id      : None
From         : 220.0.0.2
Res. Nexthop : 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

```

```

-----
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 Nexthop As-Path	LocalPref Path-Id	MED VPNLabel

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 241: Output fields: policy test field

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

17.23 pool

pool

Syntax
`pool pool-name`

Context
[\[Tree\]](#) (tools>perform>router>dhcp6>server pool)
[\[Tree\]](#) (tools>perform>router>dhcp>server pool)

Full Context
tools perform router dhcp6 local-dhcp-server pool
tools perform router dhcp 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
7705 SAR Gen 2

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

7705 SAR Gen 2

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#		

17.24 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

7705 SAR Gen 2

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      01/07/2013 19:07:11
  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 242: Output fields: extended pool statistics describes extended pool statistics output fields.

Table 242: Output fields: extended pool statistics

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

7705 SAR Gen 2

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 243: Output fields: DHCP6 pool extended statistics describes DHCP6 extended pool statistics output fields.

Table 243: Output fields: DHCP6 pool extended statistics

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>dhcp6>server pool-ext-stats)

[Tree] (clear>router>dhcp>server pool-ext-stats)

Full Context

clear router dhcp6 local-dhcp-server pool-ext-stats

clear router dhcp local-dhcp-server pool-ext-stats

Description

This command clears extended pool statistics.

Parameters

pool-name

Clears information about the pool name.

Platforms

7705 SAR Gen 2

17.25 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

7705 SAR Gen 2

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 244: Output fields: failover pool statistics describes pool statistics output field descriptions.

Table 244: Output fields: failover pool statistics

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 local 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

17.26 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 commands 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 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 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

7705 SAR Gen 2

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 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" 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 245: Output fields: pool threshold statistics](#) describes pool threshold statistics output fields.

Table 245: Output fields: pool threshold statistics

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

7705 SAR Gen 2

17.27 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

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Output

The following outputs are example of pool information, and [Table 246: Output fields: 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 Admin ResvCBS	PoolSize
5/1	Acc-Ing	default	0 30%	0
5/1	Acc-Egr	default	0 30%	0
5/1	Net-Egr	default	0 Sum	0
Port Pools				
Port	App.	Pool Name	Actual ResvCBS Admin ResvCBS	PoolSize
5/1/1	Acc-Ing	default	16128 30%	52224
5/1/1	Acc-Egr	default	23040 30%	75264
5/1/1	Net-Egr	default	0 Sum	0
5/1/2	Acc-Ing	default	0 30%	0
5/1/2	Acc-Egr	default	0 30%	0
5/1/2	Net-Egr	default	32256 Sum	75264
5/1/3	Acc-Ing	default	0	0

```

5/1/3      Acc-Egr default      30%      0
5/1/3      Net-Egr default      30%      0
5/1/3      Net-Egr default      32256     75264
5/1/4      Acc-Ing default      Sum
5/1/4      Acc-Ing default      0         0
5/1/4      Acc-Egr default      30%      0
5/1/4      Net-Egr default      30%      0
5/1/4      Net-Egr default      32256     75264
5/1/5      Acc-Ing default      Sum
5/1/5      Acc-Ing default      0         0
5/1/5      Acc-Egr default      30%      0
5/1/5      Acc-Egr default      0         0
5/1/5      Net-Egr default      30%      0
5/1/5      Net-Egr default      32256     75264
5/1/5      Net-Egr default      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 : qgl: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->qgl: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 246: Output fields: pools describes the output fields for the **show pools** command.

Table 246: Output fields: 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.

17.28 port

port

Syntax

port [*port-id*] [**statistics** [**egress-aggregate**]] [**detail**]

port *port-id* **associations**

port [*port-id*] **description** [**detail**]

port *port-id* **dotx1** [**hosts**] [**detail**]

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

<i>port-id</i>			Specifies the physical port ID in the form <i>slot/mda/port</i> .		
Values			<i>port-id</i>	<i>slot[/mda[/port]]</i> or <i>slot/mda/port [.channel]</i>	
			aps-id	<i>aps-group-id[.channel]</i>	
				<i>group-id</i>	1 to 64
			pxc-id	<i>pxc-id.sub-port</i>	
				<i>pxc</i>	keyword
				<i>id</i>	1 to 64
				<i>sub-port</i>	a, b

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 `tmnxPortLastFetchTime` MIB entry and YANG state variable does not change.

associations

Keyword that displays a list of port association.

description

Keyword that displays port description strings.

detail

Keyword that displays detailed information.

dot1x

Keyword that displays information about 802.1x status and statistics.

ethernet

Keyword that displays Ethernet port information.

statistics

Keyword that displays port statistics.

Platforms

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Output

The following outputs are examples, and [Table 247: Output fields: 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> dot1x](#)
- [Output Example: show port <port-id> \[statistics \[egress-aggregate\]\] \[detail\]](#)

Output Example: show port <port-id>

```
*A:cses-V22# show port
=====
Ports on Slot 1
=====
```

Port Id	Admin State	Link	Port State	Cfg MTU	Oper MTU	LAG/ Bndl	Port Mode	Port Encp	Port Type	C/QS/S/XFP/ MDIMDX
1/1/c1	Up		Link Up						conn	Unknown
1/1/c1/1	Down	No	Down	1578	1578	-	netw	null	xgige	
1/1/c2	Up		Link Up						conn	Unknown
1/1/c2/1	Down	No	Down	1578	1578	-	netw	null	xgige	
1/1/c3	Up		Link Up						conn	Unknown
1/1/c3/1	Down	No	Down	1578	1578	-	netw	null	xcme	
1/1/c4	Up		Link Up						conn	Unknown

1/1/c4/1	Down	No	Down	1578	1578	- netw null	xgige	
1/1/c5	Up		Link Up				conn	Unknown
1/1/c5/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c6	Up		Link Up				conn	Unknown
1/1/c6/1	Down	No	Down	1578	1578	- netw null	xgige	
1/1/c7	Up		Link Up				conn	Unknown
1/1/c7/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c8	Up		Link Up				conn	Unknown
1/1/c8/1	Down	No	Down	1578	1578	- netw null	xgige	
1/1/c9	Up		Link Up				conn	Unknown
1/1/c9/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c10	Up		Link Up				conn	Unknown
1/1/c10/1	Down	No	Down	1578	1578	- netw null	xgige	
1/1/c11	Up		Link Up				conn	Unknown
1/1/c11/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c12	Up		Link Up				conn	Unknown
1/1/c12/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c13	Up		Link Up				conn	Unknown
1/1/c13/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c14	Up		Link Up				conn	Unknown
1/1/c14/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c15	Up		Link Up				conn	Unknown
1/1/c15/1	Down	No	Down	1578	1578	- netw null	xcme	
1/1/c16	Up		Link Up				conn	Unknown
1/1/c16/1	Down	No	Down	1578	1578	- netw null	xcme	
1/2/1	Up	Yes	Up			- accs dotq	vport	
1/2/2	Up	Yes	Up			- accs dotq	vport	
1/3/nat-in-ip	Up	Yes	Up			- accs qinq	vport	
1/3/nat-out-ip	Up							
	Up	Yes	Up			- accs qinq	vport	
1/3/nat-in-l2	Up	Yes	Up			- netw dotq	vport	
1/3/lns-net	Up	Yes	Up			- accs qinq	vport	
1/3/lns-esm	Up	Yes	Up			- accs qinq	vport	
1/3/nat-in-ds	Up	Yes	Up			- accs qinq	vport	
1/3/lo-gre	Up	Yes	Up			- accs dotq	vport	

Output Example: show port <port-id> (Summary Table of Ports)

```
*A:ALU-1# show port 1/1
```

Ports on Slot 1										
Port Id	Admin State	Link State	Port State	Cfg MTU	Oper MTU	LAG/ Bndl Mode	Port Mode	Port Encp	Port Type	SFP/XFP/ MDIMDX
1/1/c1	Up		Link Up						conn	Unknown
1/1/c1/1	Down	No	Down	1578	1578	- netw null			xgige	
1/1/c2	Up		Link Up						conn	Unknown
1/1/c2/1	Down	No	Down	1578	1578	- netw null			xgige	
1/1/c3	Up		Link Up						conn	Unknown
1/1/c3/1	Down	No	Down	1578	1578	- netw null			xcme	
1/1/c4	Up		Link Up						conn	Unknown
1/1/c4/1	Down	No	Down	1578	1578	- netw null			xgige	
1/1/c5	Up		Link Up						conn	Unknown
1/1/c5/1	Down	No	Down	1578	1578	- netw null			xcme	
1/1/c6	Up		Link Up						conn	Unknown
1/1/c6/1	Down	No	Down	1578	1578	- netw null			xgige	
1/1/c7	Up		Link Up						conn	Unknown
1/1/c7/1	Down	No	Down	1578	1578	- netw null			xcme	
1/1/c8	Up		Link Up						conn	Unknown
1/1/c8/1	Down	No	Down	1578	1578	- netw null			xgige	
...										

*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 A/1 detail
Description      : 10/100/Gig Ethernet TX
Interface       : A/1
Oper Speed      : 100 Mbps
Link-level      : Ethernet
Config Speed    : 1 Gbps
Admin State     : up
Oper Duplex     : full
Oper State      : up
Config Duplex   : full
Physical Link    : Yes
Single Fiber Mode : No
IfIndex         : 1611137032
MTU             : 1514
Last State Change : 03/20/2025 14:19:27
Min Frame Length : 64 Bytes
Hold Time Up    : 0 seconds
Hold Time Down  : 0 seconds
Hold Time Up Rmng: 0 cs
Hold Time Down Rmng: 0 cs
Last Cleared Time : N/A
Phys State Chng Cnt: 1
RS-FEC Config Mode : None
RS-FEC Oper Mode  : None

Configured Mode : network
Dot1Q Ethertype : 0x8100
Encap Type      : null
QinQ Ethertype  : 0x8100
Net. Egr. Queue Pol: n/a
Egr. Sched. Pol : n/a
Monitor Oper Group : none
Auto-negotiate   : true
MDI/MDX          : MDI
Oper Phy-tx-clock : not-applicable
Collect-stats    : Disabled
Accounting Policy : None
Collect Eth Phys : Disabled
Acct Plcy Eth Phys : None
Ingress Rate     : Default
Egress Rate      : Default
Oper Egress Rate : Unrestricted
LACP Tunnel      : Disabled
Load-balance-algo : Default
Booking Factor   : 100
Access Bandwidth : Not-Applicable
Access Available BW: 0
Access Booked BW : 0
Discard Rx Pause : Disabled

Sync. Status Msg. : Disabled
Rx SSM code       : 1110
Rx Quality Level  : N/A
Tx DUS/DNU       : Disabled
Rx enh SSM code   : none
SSM Code Type     : sdh
Tx Quality Level  : N/A

Configured Address : c6:9a:fe:c2:49:f2
Hardware Address   : c6:9a:fe:c2:49:f2
=====
Traffic Statistics
```

=====			
		Input	Output

Octets		0	0
Packets		0	0
Errors		0	0
=====			
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
=====			

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> [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 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
-----	-----	-----
pxc1.a	4654649	94523288
	22544	99852
	98652214	65889554
	55451	22144
=====	=====	=====

Table 247: Output fields: port ID describes the output fields for the **show port <port-id>** command.

Table 247: Output fields: port ID

Label	Description
50GHz Ch Min/Max	The 50 GHz channel minimum and maximum
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

Label	Description
AIS-P	The number of AIS-P packets received
Alarm Status	<p>The bits used to indicate alarms:</p> <p>loc — A loss of clock which causes the operational state of the port to be downed</p> <p>lais — Line alarm indication signal errors</p> <p>lrdi — Line remote defect indication errors. LRDIs are caused by remote LOF, LOC, and LOS</p> <p>ss1f — Section synchronization failure as reported by the S1 byte</p> <p>sb1err — Section B1 errors</p> <p>lb2erSd — Line signal degradation BER errors</p> <p>lb2erSf — Line signal failure BER errors</p> <p>slof — Section loss of frame errors</p> <p>slos — Section loss of signal errors</p> <p>stxptr — Section synchronization error on the transmit side. Indicates if there is a positive or negative justification count per channel</p> <p>srxptr — Section synchronization error on the receive side. Indicates if there is a positive or negative justification count per SONET path</p> <p>lrei — Line error condition raised by the remote as a result of B1 errors received from this node</p>
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	<p>The amount of time, in nanoseconds, compensated for signal delay because of cable length</p> <p>Refer to the cable manufacturer data to determine accurate signal delay statistics for the type and length of cable used</p>
Antenna status	<p>ok: valid antenna connection</p> <p>under-current: open condition. The port remains operationally up in the event that any GNSS splitters used do not provide a load.</p>

Label	Description
	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
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

Label	Description
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 plop — Path loss of pointer (per tributary) errors prdi — Path remote defect indication errors pb3err — Path B3 errors pplm — Path payload mismatch. As a result, the path can be operationally downed prei — Path error condition raised by the remote as a result of B3 errors received from this node puneq — Unequipped path errors. plcd — Path loss of codegroup delineation error. It is applicable only when the value of tmnxPortEtherXGigMode is set to 'wan'.
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: gcm-aes-128, gcm-aes-256, gcm-aes-xpn-128, gcm-aes-xpn-256
CIR Rule	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.

Label	Description
	<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: single-tag, dual-tag</p>
Coherent Optical Module	Information for the coherent optical module
Coherent Optical Port Statistics	<p>Statistics for the coherent optical port</p> <p>For Coherent CFP, the Rx Power field displays per-channel power.</p>
Collect-stats Collect Stats	<p>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.</p> <p>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.</p>
Collisions	The best estimate of the total number of collisions on this Ethernet segment
Config Duplex	<p>Full — The link is set to full duplex mode</p> <p>Half — The link is set to half duplex mode</p>
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	<p>network — The port is configured for transport network use</p> <p>access — The port is configured for service access</p>
Configured Mode	<p>network — The port is configured for transport network use</p> <p>access — The port is configured for service access. Channelized ports are always access ports</p>
Configured VCs	The number of configured VCs
Connector Code	<p>The vendor organizationally unique identifier field (OUI)</p> <p>contains the IEEE company identifier for the vendor</p>

Label	Description
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.
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

Label	Description
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 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"> temperature

Label	Description
	<ul style="list-style-type: none"> gain power out power in
Encryption Offset	<p>The encryption offset configured on this node: 0, 30, 50.</p> <p>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.</p>
EFM OAM	<p>Enabled — EFM OAM is enabled</p> <p>Disabled — EFM OAM is disabled</p>
EFM OAM Link Mon	<p>Enabled — Link monitoring functionality is enabled</p> <p>Disabled — Link monitoring functionality is disabled</p>
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	<p>The configured elevation angle below which satellites are ignored. The default elevation mask angle is 10°.</p> <p>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.</p>

Label	Description
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
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

Label	Description
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
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

Label	Description
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
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 down timer controls the dampening timer for link down transitions
Hold Time Down Rmng	The time remaining for a hold down timer. If the hold 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 hold timer is not active, this displays zero.
HS Turbo Queues	HS turbo queues that allow the corresponding HSQ queue group queues for higher throughput
IfIndex	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)

Label	Description
IngAmp	The ingress amplifier alarm information, including: <ul style="list-style-type: none"> • temperature • gain • power out • power in
In Packets	The number of echo-reply packets received
In Pause Frames	The number of In Pause frames
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 7705 SAR Gen 2, 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

Label	Description
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
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

Label	Description
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
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

Label	Description
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
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

Label	Description
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
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.

Label	Description
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.
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

Label	Description
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.
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, an additional layer of framing encapsulates an MDA's native 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

Label	Description
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. 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 <i>7705 SAR Gen 2 Interface Configuration Guide</i> , "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	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 show port summary: - from "Down" to either "Link Up" or "Up" - from either "Link Up" or "Up" to "Down"

Label	Description
	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).
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	<p>Yes — A physical link is present</p> <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	

Label	Description
Port IfIndex	The GNSS interface index number, which reflects its initialization sequence
Port Mode	Network — The port is configured for transport network use Access — The port is configured for service access Hybrid — The port is configured for both access and network use
Port State	Up — The port is physically present and has physical link present Down — The port is physically present but does not have a link. This state may also be considered as Link Down Ghost — A port that is not physically present None — The port is in its initial creation state or about to be deleted Link Up — A port that is physically present and has physical link present 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.
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

Label	Description
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-ply	The 802.1x port RADIUS policy name
Range	The usable range to fine tune the frequency
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

Label	Description
	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
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

Label	Description
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
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

Label	Description
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
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 encap-match 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

Label	Description
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
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

Label	Description
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>7705 SAR Gen 2 Interface Configuration Guide</i> , "Statistics on Physical PXC Ports" section
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

Label	Description
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
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>ftmnmMacsecConnAssocReplayProtect</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

Label	Description
	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
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 Percnt	The violation threshold percentage
Violation Total Count	The violation total count
Visable 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 {*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]

apskeyword

group-id1 to 64

esa-vm-id
Specifies the ESA VM identifier.

Values	esa-esa-id/vm-id/vm-port
esa	keyword
esa-id	1 to 16
vm-id	1 to 4
vm-port	vm-type specific [fm-sub to-sub ..]

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 to10

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

7705 SAR Gen 2

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.

<i>port-id</i>	<i>slot/mda/port</i>		
	aps-id	aps-group-id	
	aps		keyword

group-id

1 to 128

Platforms

7705 SAR Gen 2

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

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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.

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	keyword
	id	1 to 64
	sub-port	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

7705 SAR Gen 2

Output

The following output is an example of port scheduler hierarchy information, and [Table 248: Output fields: QoS schedule hierarchy port](#) 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 248: Output fields: QoS schedule hierarchy port

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.
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.			
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	keyword
		id	1 to 64
		sub-port	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

7705 SAR Gen 2

Output

The following output is an example of QoS port aggregation rate output, and [Table 249: Output fields: QoS aggregation rate](#) 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 249: Output fields: QoS aggregation rate

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.
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.

Label	Description
Limit Unused Bandwidth	Indicates whether the limit-unused-bandwidth 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* [*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/mda/port</i> [<i>channel</i>]	
eth-sat-id	esat-id/slot/port	
	esat	keyword
	id	1 to 20

pxc-id	<i>pxc-id.sub-port</i>	
	<i>pxc</i>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b
aps-id	<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.

- Values3 to 60
- Default10 seconds

repeat

Configures how many times the command is repeated.

- Values1 to 999
- Default10

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

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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
	O	0	0	0	0.00
5/2/1	I	0	0	0	0.00
	O	0	0	0	0.00

At time t = 3 sec (Mode: Rate)					

5/1/1	I	0	0	0	0.00
	O	0	0	0	0.00
5/2/1	I	0	0	0	0.00
	O	0	0	0	0.00

At time t = 6 sec (Mode: Rate)					

5/1/1	I	0	0	0	0.00
	O	0	0	0	0.00
5/2/1	I	0	0	0	0.00
	O	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-agg-shaper-sched [interval seconds] [repeat repeat] [absolute | rate]
port port-id [port-id] hw-agg-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.

port-id

slot/mda/port [.channel]

aps-id

aps-group-id[.channel]

aps

keyword

group-id

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

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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*

port-id *slot/mda/port* [*.channel*]

 eth-sat-id *esat-id/slot/port*

 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

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

7705 SAR Gen 2

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/mda/port</i> [<i>.channel</i>]	
	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

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

7705 SAR Gen 2

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	<i>slot/mdal/port</i> [.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

7705 SAR Gen 2

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

7705 SAR Gen 2

```
port
```

Syntax

```
port port-id egress [network] [queue-group queue-group-name] [instance instance-id] [arbiter name |  
root]
```

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 250: Output fields: Vport scheduler statistics describes Vport scheduler statistics output fields.

Table 250: Output fields: Vport scheduler statistics

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

17.29 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

7705 SAR Gen 2

Output

The following output is an example of MLD snooping information for a specific SAP.

Output Example

```
*A:rbac_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      Stdby
-----
FF04::1                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:rbac_C#

*A:rbac_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:rbac_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

7705 SAR Gen 2

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 251: Output fields: IGMP snooping port database describes the show output fields.

Table 251: Output fields: IGMP snooping port database

Label	Description
Group Address	The IP multicast group address for which this entry contains information.
Mode	<p>Specifies the type of membership reports received on the interface for the group.</p> <p>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.</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>
Type	<p>Indicates how this group entry was learned.</p> <p>If this group entry was learned by IGMP, the value is set to dynamic.</p> <p>For statically configured groups, the value is set to static.</p>
Compatibility mode	<p>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.</p>
V1 host expires	<p>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.</p>
V2 host expires	<p>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.</p>

Label	Description
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

7705 SAR Gen 2

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

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

7705 SAR Gen 2

17.30 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

7705 SAR Gen 2

17.31 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

7705 SAR Gen 2

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#
```

17.32 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

7705 SAR Gen 2

17.33 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

17.34 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

7705 SAR Gen 2

Output

The following output is an example of QoS port scheduler policy information, and [Table 252: Output fields: QoS port scheduler](#) 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
HQ05 Algorithm   : default
Max Rate         : max
Lvl1 PIR         : max
Lvl2 PIR         : max
Lvl3 PIR         : max
Lvl4 PIR         : max
Lvl5 PIR         : max
Lvl6 PIR         : max
Lvl7 PIR         : max
Lvl8 PIR         : max
Orphan Lvl       : default
Orphan CIR-Lvl   : default
Last changed     : 05/21/2007 10:39:15
Lvl1 CIR         : max
Lvl2 CIR         : max
Lvl3 CIR         : max
Lvl4 CIR         : max
Lvl5 CIR         : max
Lvl6 CIR         : max
Lvl7 CIR         : max
Lvl8 CIR         : max
Orphan Weight    : 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)
HQOS Algorithm    : default
Max Rate          : max
Dist LAG Rate     : True
Group            : test
Group PIR         : max
Group PIR Percent : 20.00
Max Rate Percent  : 30.00
Last changed      : 07/16/2014 21:31:51
Group CIR         : max
Group CIR Percent : 20.00

Lvl1 PIR         : max
Lvl1 PIR Percent : 10.00
Lvl1 CIR         : max
Lvl1 CIR Percent : 10.00
Lvl2 PIR         : max
Lvl2 PIR Percent : 20.00
Lvl2 CIR         : max
Lvl2 CIR Percent : 20.00
Lvl3 PIR         : max
Lvl3 PIR Percent : 30.00
Lvl3 CIR         : max
Lvl3 CIR Percent : 30.00
Lvl4 PIR         : max
Lvl4 PIR Percent : 40.00
Lvl4 CIR         : max
Lvl4 CIR Percent : 40.00
Lvl5 PIR         : max
Lvl5 PIR Percent : 50.00
Lvl5 CIR         : max
Lvl5 CIR Percent : 50.00
Lvl6 PIR         : max
Lvl6 PIR Percent : 60.00
Lvl6 CIR         : max
Lvl6 CIR Percent : 60.00

```

```

Lvl7 PIR      : max
Lvl7 PIR Percent : 70.00
Lvl8 PIR      : max
Lvl8 PIR Percent : 80.00
Orphan Lvl    : default
Orphan CIR-Lvl : default
Lvl7 CIR      : max
Lvl7 CIR Percent : 70.00
Lvl8 CIR      : max
Lvl8 CIR Percent : 80.00
Orphan Weight : default
Orphan CIR-Weight : default
=====
Part of show port  Output
-----
Egr Port Sched Override
-----
Max Rate      : max*
Lvl1 PIR      : max*
Lvl1 PIR Percent : 10.00
Lvl2 PIR      : max*
Lvl2 PIR Percent : 20.00
Lvl3 PIR      : max*
Lvl3 PIR Percent : 30.00
Lvl4 PIR      : max*
Lvl4 PIR Percent : 40.00
Lvl5 PIR      : max*
Lvl5 PIR Percent : 50.00
Lvl6 PIR      : max*
Lvl6 PIR Percent : 60.00
Lvl7 PIR      : max*
Lvl7 PIR Percent : 70.00
Lvl8 PIR      : max*
Lvl8 PIR Percent : 80.00
* means the value is inherited
-----
Max Rate Percent : 50.00
Lvl1 CIR      : max*
Lvl1 CIR Percent : 10.00
Lvl2 CIR      : max*
Lvl2 CIR Percent : 20.00
Lvl3 CIR      : max*
Lvl3 CIR Percent : 30.00
Lvl4 CIR      : max*
Lvl4 CIR Percent : 40.00
Lvl5 CIR      : max*
Lvl5 CIR Percent : 50.00
Lvl6 CIR      : max*
Lvl6 CIR Percent : 60.00
Lvl7 CIR      : max*
Lvl7 CIR Percent : 70.00
Lvl8 CIR      : max*
Lvl8 CIR Percent : 80.00

```

Table 252: Output fields: QoS port scheduler

Label	Description
Policy Name	Displays the port scheduler policy name.
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.

Label	Description
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.

17.35 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]

Platforms

7705 SAR Gen 2

Output

The following output is an example of port information, and [Table 253: Output fields: port tree](#) 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 253: Output fields: port tree

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.

17.36 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

7705 SAR Gen 2

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
-----
=====
```

17.37 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

7705 SAR Gen 2

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
-----
  Number of entries      1
=====
```

[Table 254: Output fields: prefix extended statistics](#) describes extended prefix statistics output fields.

Table 254: Output fields: prefix extended statistics

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

Field	Description
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

7705 SAR Gen 2

17.38 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

7705 SAR Gen 2

17.39 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

7705 SAR Gen 2

Output

The following outputs are examples of prefix SID information, and [Table 255: Output fields: IS-IS prefix SIDs](#) describes the output fields.

Output Example

```
*A:Dut-B# show router isis 0 prefix-sids
=====
Rtr Base ISIS Instance 0 Prefix/SID Table
=====
```

Prefix	SID	Lvl/Typ Algo	SRMS MT	AdvRtr Flags
10.20.1.1/32	1	2/Int. 0	N 0	Dut-A NnP
10.20.1.1/32	11	2/Int. 128	N 0	Dut-A NnP
10.20.1.2/32	2	1/Int. 0	N 0	Dut-B NnP
10.20.1.2/32	12	1/Int. 128	N 0	Dut-B NnP
10.20.1.2/32	2	2/Int. 0	N 0	Dut-B NnP
10.20.1.2/32	12	2/Int. 128	N 0	Dut-B NnP
10.20.1.3/32	3	2/Int. 0	N 0	Dut-C NnP
10.20.1.3/32	13	2/Int. 128	N 0	Dut-C NnP
10.20.1.4/32	4	2/Int. 0	N 0	Dut-B RNnP
10.20.1.4/32	14	2/Int. 128	N 0	Dut-B RNnP
10.20.1.4/32	4	1/Int. 0	N 0	Dut-D NnP
10.20.1.4/32	14	1/Int. 128	N 0	Dut-D 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 Algo	SRMS MT	AdvRtr Flags
10.20.1.1/32	11	2/Int. 128	N 0	Dut-A NnP
10.20.1.2/32	12	1/Int. 128	N 0	Dut-B NnP
10.20.1.2/32	12	2/Int. 128	N 0	Dut-B 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      RnP
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      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 255: Output fields: IS-IS prefix SIDs

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
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
7705 SAR Gen 2

Output
The following outputs are examples of OSPF prefix SIDs information, and [Table 256: Output fields: OSPF prefix SIDs](#) 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	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

```

10.20.1.2/32      10.20.1.1      NnP
                  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
=====

```

```

*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
                   Adv-Rtr  SRMS    Flags
-----
1.0.0.1/32            0.0.0.0  INTRA-AREA 4001    Yes
                   10.20.0.1  N          NnP
10.20.0.1/32         0.0.0.0  INTRA-AREA 101      No
                   10.20.0.1  N          NnP
10.20.0.2/32         0.0.0.0  INTRA-AREA 402      N.A.
                   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 256: Output fields: OSPF prefix SIDs

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

7705 SAR Gen 2

Output

The following output is an example of prefix SIDs information, and [Table 257: Output fields: SR-MPLS prefix SIDs](#) 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 257: Output fields: SR-MPLS prefix SIDs

Label	Description
Interface Name	The name of the loopback or system interface

Label	Description
AF	The address family associated with the prefix SID
SID	The SID index
Label	The SID label
State	<div>The operational state of the prefix SID<ul style="list-style-type: none">enabled — Operational state upadminDown — Administrative state down (for example, no SID configured)failed — Operational state down due to failure (for example, resource allocation failure)ifDown — The interface is downifFailed — Interface configuration failure (for example, the interface is not a loopback)</div>

17.40 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

7705 SAR Gen 2

17.41 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

7705 SAR Gen 2

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 258: Output fields: prefix threshold statistics](#) describes prefix threshold statistics output fields.

Table 258: Output fields: prefix threshold statistics

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.
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

Field	Description
	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.
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

7705 SAR Gen 2

17.42 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: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.

Values		
ipv4-address	-	a.b.c.d:/label-space
ipv6-address	-	x:x:x:x:x:x:x:/label-space]
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.

Values

ipv4-address	- a.b.c.d
ipv6-address	- x: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

7705 SAR Gen 2

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	aps-group-id [.channel]
	aps keyword
	<i>group-id</i> 1 to 128
eth-sat-id	esat-id [/slot/[u]port]
	esat keyword
	<i>id</i> 1 to 20
	<i>u</i> keyword for up-link port
tdm-sat-id	tsat-id [/slot/[u]port.channel]
	tsat keyword
	<i>id</i> 1 to 20
	<i>u</i> keyword for up-link port
pxc-id	pxc-id.sub-port
	pxc 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
7705 SAR Gen 2

17.43 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

7705 SAR Gen 2

Output

The following output is an example of user profile output information.
[Table 259: Output fields: user profile](#) 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 259: Output fields: user profile

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

7705 SAR Gen 2

Output

The following output is an example of profile information.

Table 260: Output fields: profile 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 260: Output fields: *profile*

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 config system security command. enable-admin — Enables the user to enter a special administrative mode by entering the enable-admin 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 exit command. help — Enables the user to execute the help command. logout — Enables the user to execute the logout command. password — Enables the user to execute the password command. show config — Enables the user to execute the show config command. show — Enables the user to execute the show 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.

17.44 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

7705 SAR Gen 2

17.45 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

7705 SAR Gen 2

17.46 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

7705 SAR Gen 2

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
=====
```

17.47 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 7705 SAR Gen 2 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

7705 SAR Gen 2

Output

The following output is an example of proxy ARP information.

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
-----
```

The following output is an example of proxy ARP detailed information and [Table 261: Output fields: proxy-ARP detail](#) describes the output fields

```
A:PE-3># show service id 70 proxy-arp detail
-----
Proxy Arp
```

```

-----
Admin State      : enabled
Dyn Populate     : enabled
Age Time        : 300 secs          Send Refresh    : 120 secs
Table Size      : 250              Total            : 1
Static Count     : 1               EVPN Count       : 0
Dynamic Count    : 0               Duplicate Count   : 0
Process Probes   : enabled
Restrict Non Configured IPs : enabled
Sponge MAC       : 00:de:ad:ba:ca:00

Dup Detect
-----
Detect Window    : 3 mins          Num Moves        : 5
Hold down        : 9 mins
Anti Spoof MAC   : None

VPLS Flood Control
-----
Rcvd Garp Flood  : enabled          Rcvd Req Flood   : enabled

EVPN
-----
Garp Flood       : enabled          Req Flood        : enabled
Static Black Hole : disabled
EVPN Route Tag   : 0
-----

=====
VPLS Proxy Arp Entries
=====
IP Address      Mac Address      Type  Status  Flags  Last Update
-----
10.0.0.10       00:00:00:00:02:02  stat  active  I      05/21/2024 12:20:39
-----

Number of entries : 1
Legend : I=Immutable
=====

```

Table 261: Output fields: proxy-ARP detail

Label	Description
Proxy ARP	
Admin State	The administrative state of proxy-arp
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

Label	Description
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 Probes	The process probe status
Restrict Non Configured IPs	The restrict non-configured IPs status
Sponge MAC	The sponge MAC address
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-arp offending entry's MAC
VPLS Flood Control	
Rcvd Garp Flood	The received VPLS Garp flood status
Rcvd Req Flood	The received VPLS request flood status
EVPN	
Garp Flood	The EVPN received Garp flood status
Req Flood	The received EVPN request flood status
Static Black Hole	The static black hole status
EVPN Route Tag	The route tag of the entry
VPLS Proxy Arp Entries	
IP Address	The IP address of proxy-arp
Mac Address	The optional anti-spoof-mac to use
Type	The type of entry
Status	The status of entry
Flags	The flag type
Last Update	The date and time of the last update
Number of entries	The number of VPLS proxy ARP entries

The following output is an example of proxy ARP dynamic information.

```
=====
*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      Remaining
              (mins)         Resolve Time
              (secs)
-----
10.0.0.1     list-1         1                 0
-----
Number of Entries: 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
7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
```

17.48 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

7705 SAR Gen 2

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
=====
```

17.49 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

7705 SAR Gen 2

Output

The following output is an example of MLD snooping proxy database information.

Output Example

```
*A:rbac_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:rbac_C#

*A:rbac_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:rbac_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

7705 SAR Gen 2

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 262: Output fields: IGMP snooping proxy describes the show output fields.

Table 262: Output fields: IGMP snooping proxy

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
	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 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.
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.

17.50 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 7705 SAR Gen 2 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

7705 SAR Gen 2

Output

The following output is an example of proxy ND information and [Table 263: Output fields: proxy-ND detail](#) 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 263: Output fields: proxy-ND detail](#) describes the output fields.

Output Example

```
*A:PE-3>config>service>vpls# show service id 70 proxy-nd detail
-----
Proxy ND
-----
Admin State      : disabled
Dyn Populate     : disabled
Age Time         : disabled          Send Refresh     : disabled
Table Size      : 250                Total           : 1
Static Count    : 1                  EVPN Count      : 0
Dynamic Count   : 0                  Duplicate Count : 0
Process DAD NS  : enabled
Restrict Non Configured IPs : enabled
Sponge MAC      : 00:de:ad:ba:ca:00

Dup Detect
-----
Detect Window    : 3 mins              Num Moves       : 5
Hold down       : 9 mins
Anti Spoof MAC  : None

VPLS Flood Control
-----
Rcvd Unknown NS Flood : enabled
Rcvd Rtr Unsol NA Flood: enabled      Rcvd Host Unsol NA Fld : enabled

EVPN
-----
Unknown NS Flood : enabled          ND Advertise     : Router
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:db8:1::10  00:00:00:00:02:02 stat inActv R I 0  05/21/2024 12:23:37
-----
Number of entries : 1
Legend : I=Immutable, 0=Override, R=Router, H=Host
=====
```

Table 263: Output fields: proxy-ND detail

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

Label	Description
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
Restrict Non Configured IPs	The restrict non-configured IPs status
Sponge MAC	The sponge MAC address
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
VPLS Flood Control	
Rcvd Unknown NS Flood	The received unknown neighbor solicitations flood status
Rcvd Rtr Unsol NA Flood	The received router unsolicited neighbor association flood status
Rcvd Host Unsol NA Fld	The received host unsolicited neighbor association flood status
EVPN	
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
VPLS Proxy ND Entries	

Label	Description
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
Flags	The flag type
Last Update	The date and time of the last update
Number of entries	The number of VPLS proxy ARP entries

The following output is an example of proxy ND dynamic information and [Table 264: Output fields: 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 264: Output fields: 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 264: Output fields: proxy-ND dynamic

Label	Description
Proxy ND Dyn Cfg Summary	
IP Addr	The IP address of proxy-nd dynamic

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
```

17.51 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

7705 SAR Gen 2

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 ER0 : ->
(1) IPv4Prefix 10.10.11.4/32, Strict
(2) IPv4Prefix 10.10.9.6/32, Strict
PSB SENT ER0 : ->
(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 ER0 : ->
  (1) IPv4Prefix 10.10.11.4/32, Strict
  (2) IPv4Prefix 10.10.9.6/32, Strict
PSB SENT ER0 : ->
  (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 ER0 : ->
(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 Summary Paths Received :0
Num Summary Paths Transmitted:0
Num Summary Resvs Received :0
Num Summary Resvs Transmitted:0
Created at 1773 (74 secs back)
-----
Total PSB Count : 1
```

17.52 pw

pw

Syntax

pw

Context

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

[\[Tree\]](#) (tools>perform>service>id>loopback pw)

Full Context

tools perform service id admin-lock pw

tools perform service id loopback 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

7705 SAR Gen 2

17.53 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

7705 SAR Gen 2

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			

17.54 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

7705 SAR Gen 2

18 q Commands

18.1 qos

qos

Syntax

qos

Context

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

Full Context

clear qos

Description

Commands in this context clear QoS statistics.

Platforms

7705 SAR Gen 2

qos

Syntax

qos

Context

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

Full Context

show qos

Description

Commands in this context display QoS information.

Platforms

7705 SAR Gen 2

qos

Syntax

qos

Context

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

Full Context

tools dump qos

Description

Commands in this context dump QoS information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

18.2 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

7705 SAR Gen 2

Output

The following output is an example of service MLD snooping querier information.

Output Example

```
*A:rbac_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:rbac_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

7705 SAR Gen 2

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 265: Output fields: IGMP snooping queriers describes the show output fields.

Table 265: Output fields: IGMP snooping queriers

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

7705 SAR Gen 2

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

7705 SAR Gen 2

18.3 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

7705 SAR Gen 2

18.4 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

7705 SAR Gen 2

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
_tmnx_nat_egr_q_grp        NAT/LNS Egress Queue Group Template
policer-output-queues      Default egress policer output queues.
_tmnx_nat_egr_q_grp_v2     NAT/LNS Egress Queue Group Template for ISAv2
_tmnx_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
Admin PIR                  : 50000
PIR Rule                   : closest
CBS                        : def
Packet Byte Offset        : add 0
Adv Config Policy          : (Not Specified)
Parent                    : sl
PIR Level/Weight           : 1/1
Burst Limit               : default
Wred Queue Mode            : none
Slope Policy              : default
Dynamic MBS               : enabled
High-Plus Drop Tail       : def
Low Drop Tail             : def
Queue-Type                : best-effort
Admin CIR                 : 0
CIR Rule                  : closest
MBS                      : 1000 KB
CIR Level/Weight          : 0/1
Wred Queue SlopeUsage     : not-applicable
Queue Delay               : not-applicable
High 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
Rate                      : max
PIR Adaptation Rule      : closest
Class Weight              : 1
Percent Rate              : 100.00

HS Wrr Group Id           : 2
Rate                      : max
PIR Adaptation Rule      : closest
Class Weight              : 1
Percent Rate              : 100.00
-----
=====
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 for 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

7705 SAR Gen 2

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

7705 SAR Gen 2

19 r Commands

19.1 radius

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

7705 SAR Gen 2

19.2 radius-accounting-policy

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

7705 SAR Gen 2

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
                        Jitter
-----
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.  
=====
```

19.3 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

7705 SAR Gen 2

19.4 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
7705 SAR Gen 2

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 266: Output fields: proxy server describes subscriber RADIUS proxy server output fields.

Table 266: Output fields: proxy server

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
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

Label	Description
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
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

Label	Description
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
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

Label	Description
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

19.5 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

7705 SAR Gen 2

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
=====
```

19.6 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

7705 SAR Gen 2

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 267: Output fields: RADIUS server policy statistics describes RADIUS server policy statistics output fields.

Table 267: Output fields: RADIUS server policy statistics

Label	Description
Tx transaction requests	The number of RADIUS transaction requests transmitted
Rx transaction responses	The number of RADIUS transaction responses received

Label	Description
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
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** [**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

7705 SAR Gen 2

19.7 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

7705 SAR Gen 2

Output

OSPF Range Output

Table 268: Output fields: OSPF range describes the OSPF range output fields.

Table 268: Output fields: OSPF range

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.
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#			

19.8 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

member
Specifies the member ID.

Values 1 to 255

Platforms
7705 SAR Gen 2

19.9 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

7705 SAR Gen 2

19.10 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: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

7705 SAR Gen 2

Output

Redirect Policy Output — The following output is an example of redirect policy information, and [Table 269: Output fields: redirect policy](#) 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              Oper Priority: 105
Admin State      : Up              Oper State   : Down

Ping Test
Source Address   : None
Interval        : 1              Timeout      : 30
Drop Count       : 5
```

```
Hold Down      : 0                      Hold Remain   : 0
Last Action at : 03/19/2007 00:46:55    Action Taken  : Disable
=====
A:ALA-A>config>filter#
```

Table 269: Output fields: redirect policy

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
Drop Count	Specifies the number of consecutive requests that must fail for the destination to 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

Label	Description
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

7705 SAR Gen 2

19.11 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

7705 SAR Gen 2

Output

Redirect Policy Output — The following output is an example of redirect policy binding information, and [Table 270: Output fields: redirect policy bindings](#) 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 270: Output fields: redirect policy bindings

Label	Description
Test Binding	Specifies a specific test binding field

19.12 redundancy

redundancy

Syntax

redundancy

Context

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

Full Context

tools dump redundancy

Description

Commands in this context dump redundancy parameters.

Platforms

7705 SAR Gen 2

redundancy

Syntax

redundancy

Context

[Tree] (show redundancy)

Full Context

show redundancy

Description

Commands in this context show redundancy information.

Platforms

7705 SAR Gen 2

redundancy

Syntax

redundancy

Context

[Tree] (tools>perform redundancy)

Full Context

tools perform redundancy

Description

Commands in this context display redundancy information.

Platforms

7705 SAR Gen 2

redundancy

Syntax

redundancy

Context

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

Full Context

clear redundancy

Description

Commands in this context clear redundancy parameters.

Platforms

7705 SAR Gen 2

19.13 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 displays TWAMP-Light reflector information.

Platforms

7705 SAR Gen 2

Output

The following output is an example of TWAMP Light reflector information, and [Table 271: Output fields: TWAMP Light reflectors](#) describes the output fields.

Output Example

```
show test-oam twamp twamp-light reflectors
=====
TwAMP-Light Reflectors
=====
Router/VRPN   Admin  Type uS UDP Port Prefix   Frames Rx   Frames Tx IPv6Udp0
-----
Base          Up STAMP Y    862    1    2425283   2425283    No
500           Up STAMP      862    2    6340      6340      No
-----
No. of TWAMP-Light Reflectors: 2
uS = Y: LAG micro-session delay and loss measurement enabled
=====
```

Table 271: Output fields: TWAMP Light reflectors

Label	Description
Router/VRPN	Displays the routing instance
Admin	Displays the administrative state of the reflector
Type	Displays the configured packet processing of the reflector STAMP – supports STAMP formatted packets and optional STAMP TLVs, as well as processing TWAMP Light formatted packets TWL – supports TWAMP Light formatted packets, but not the decoding of STAMP options. STAMP packets are processed using TWAMP Light logic and additional STAMP-specific fields are treated as padding.
uS	Displays if LAG micro session delay and loss measurement is enabled Y – Yes Blank – No
UDP Port	Displays the listening UDP port on the Session-Reflector
Prefix	Displays the IP source-allowed prefixes configured
Frames Rx	Displays the number of packets received on the Session-Reflector
Frames Tx	Displays the number of packets transmitted by the Session-Reflector
IPv6Udp0	Allow for the processing of IPv6 packets that arrive with a UDP port of zero

19.14 refresh-lsas

refresh-lsas

Syntax

refresh-lsas [*lsa-type*] [*area-id*]

Context

[\[Tree\]](#) (tools>perform>router>ospf3 refresh-lsas)

[\[Tree\]](#) (tools>perform>router>ospf refresh-lsas)

Full Context

tools perform router ospf3 refresh-lsas

tools perform router ospf refresh-lsas

Description

This command refreshes LSAs for OSPF.

Platforms

7705 SAR Gen 2

19.15 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

7705 SAR Gen 2

19.16 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 272: Output fields: remote management](#)
- [Output Example: remote-management detail](#); output fields [Table 273: Output fields: remote management detail](#) and [Table 272: Output fields: remote management](#) for fields that are common to all the remote management output commands
- [Output Example: remote-management manager](#); output fields [Table 274: Output fields: remote management manager](#) and [Table 272: 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 272: Output fields: remote management

Label	Description
Administrative State	Displays the administrative state of the management service

Label	Description
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 273: Output fields: 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

Label	Description
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 274: 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

Label	Description
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

19.17 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

7705 SAR Gen 2

19.18 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

7705 SAR Gen 2

19.19 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

7705 SAR Gen 2

19.20 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

7705 SAR Gen 2

19.21 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

19.22 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

7705 SAR Gen 2

19.23 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

7705 SAR Gen 2

19.24 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

7705 SAR Gen 2

19.25 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

7705 SAR Gen 2

19.26 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

7705 SAR Gen 2

rip

Syntax

rip

Context

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

Full Context

show router rip

Description

Displays RIP information.

Platforms

7705 SAR Gen 2

rip

Syntax

rip

Context

[\[Tree\]](#) (monitor>router rip)

Full Context

monitor router rip

Description

This command monitors commands for the RIP instance.

Platforms

7705 SAR Gen 2

19.27 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

7705 SAR Gen 2

19.28 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

7705 SAR Gen 2

```
ripng
```

Syntax

```
ripng
```

Context

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

Full Context

show router ripng

Description

Commands in this context display RIP-NG related information.

Platforms

7705 SAR Gen 2

ripng

Syntax

ripng

Context

[\[Tree\]](#) (monitor>router ripng)

Full Context

monitor router ripng

Description

This command monitors commands for the RIP instance.

Platforms

7705 SAR Gen 2

19.29 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

7705 SAR Gen 2

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           : cfl:/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   : cfl:/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
=====
```

19.30 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

7705 SAR Gen 2

19.31 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-ift, 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

7705 SAR Gen 2

Output

The following output are examples of route table information, and [Table 275: Output fields: route table](#) 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# 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# 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# 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
=====

```

Table 275: Output fields: route table

Label	Description
Dest Address	The route destination address and mask

Label	Description
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]      Active    Metric
-----
180.10.0.1/32 [B][S]             Remote    BGP        00h00m49s    170
    10.10.10.1                     0
180.10.0.1/32 [B][S]             Remote    BGP        00h00m49s    170
    10.10.10.5                     0
180.10.0.1/32 [B][S]             Remote    BGP        00h00m49s    170
    10.10.10.10                    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:PE-3# show router 1 route-table extensive

=====
Route Table (Service: 1)
=====
Dest Prefix      : 10.10.10.0/24
Protocol         : EVPN-IFL
Age              : 06d03h05m
Preference       : 170
Indirect Next-Hop : 192.168.0.2
  VNI            : 100
  MAC-NH         : 00:aa:aa:01:00:01
  VPN Next-Hop Index : 65
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : N/A
  Resolving Next-Hop : 192.0.2.1 (VXLAN tunnel)
    Metric       : 5
    ECMP-Weight  : N/A
-----
Dest Prefix      : 40.40.40.0/24
Protocol         : EVPN-IFL
Age              : 06d03h05m
Preference       : 170
Indirect Next-Hop : 192.168.0.2
  VNI            : 200
  MAC-NH         : 00:bb:bb:01:00:01
  VPN Next-Hop Index : 65
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : N/A
  Resolving Next-Hop : 192.0.2.2 (VXLAN tunnel)
    Metric       : 5
    ECMP-Weight  : N/A
-----
Dest Prefix      : 50.50.50.0/24
Protocol         : EVPN-IFL
Age              : 06d03h05m
Preference       : 170
Indirect Next-Hop : 2001:db8::5
  SRV6 SID       : cafe:3:5:4008::
  VPN Next-Hop Index : 14
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : N/A
  Resolving Next-Hop : cafe:3:5:4008:: (SRV6 tunnel)
    Metric       : 10
    ECMP-Weight  : N/A
```

```
*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
=====
```

19.32 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

7705 SAR Gen 2

19.33 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	
<i>router-instance</i> :	<i>router name</i> <i>vprn-svc-id</i>
	<i>router-name</i> Base management <i>cpm-vr-name</i> vpls-management
	<i>cpm-vr-name</i> [32 characters maximum]
	<i>vprn-svc-id</i> [1..2147483647]

Default Base

service-name
specifies the service name, up to 64 characters.

Platforms

7705 SAR Gen 2

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
7705 SAR Gen 2

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 <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

7705 SAR Gen 2

router

Syntax

router

Context

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

Full Context

tools perform router

Description

This command enables the tools for the router instance.

Platforms

7705 SAR Gen 2

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	
router-name:	Base, management, cpm-vr-name, vpls-management
vpm-service-id:	1 to 2147483647
cpm-vr-name	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

7705 SAR Gen 2

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

7705 SAR Gen 2

19.34 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

19.35 routes

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.

l2-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** \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**

rd

Specifies a route distinguisher value.

Values ip-addr:comm-va
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

7705 SAR Gen 2

Output

The following outputs are examples of BGP route information, and [Table 276: Output fields: BGP routes](#) 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/::                 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
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

Interface Name : NotAvailable
Aggregator     : None
MED            : None
IGP Cost       : n/a

Peer Router Id : 10.20.1.3

Final Orig Val : N/A
Dest Class     : 0

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
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    : 00h22m42s

Interface Name : NotAvailable
Aggregator     : None
MED            : None
IGP Cost       : n/a

Peer Router Id : 10.20.1.3

Final Orig Val : N/A
Dest Class     : 0

-----
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
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
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
Nexthop        : 10.20.1.1
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: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
Nexthop        : 10.20.1.4
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
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 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
Nexthop       : 10.20.1.4
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             MED           : 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           MED           : 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
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : target:100:100
Cluster       : No Cluster Members
Originator Id : None
Fwd Class     : 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. Nexthop  : 1.1.3.1
Local Pref.   : None
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : No Community Members
Cluster       : No Cluster Members
Originator Id : None
Fwd Class     : None
Flags         : Used Valid Best Incomplete In-RTM
Route Source  : External
AS-Path       : 65533
Route Tag     : 0
Neighbor-AS   : 65533
DB Orig Val   : Invalid
Source Class   : 0
Add Paths Send : Default
RIB Priority   : Normal
Peer Router Id : 10.20.1.1
Priority       : None
Interface Name : to_Dut-A
Aggregator     : None
MED            : None
IGP Cost       : 0
Res. Metric    : 0
Final Orig Val : Invalid
Dest Class     : 0

```

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                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 : 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
      Nexthop
      As-Path
      SourceAS
      SourceIP
      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
Nexthop         : 10.20.1.4
From            : 10.20.1.4
Res. Nexthop    : 0.0.0.0
Local Pref.     : 100
Interface Name  : NotAvailable
Aggregator AS   : None
Aggregator      : None
Atomic Aggr.    : Not Atomic
MED             : 0
Community       : target:10.20.1.3:2
Cluster         : No Cluster Members
Originator Id   : None
Peer Router Id  : 10.20.1.4
Flags           : Used Valid Best IGP
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
Originator Id : None
Fwd Class     : None
Flags         : Used Valid Best Incomplete
Route Source  : External
AS-Path       : 200 400 500

Peer Router Id : 2.2.2.2
Priority       : None
Interface Name : net
Aggregator     : None
MED           : 5000

Modified 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.   : None
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : 110
Community     : None
Cluster       : No Cluster Members
Originator Id : None
Fwd Class     : 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
Nexthop      : 38.120.48.199
From         : 38.120.48.199
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 Best IGP
Route Source  : Internal
AS-Path       : No As-Path
Route Tag     : 0
Interface Name : NotAvailable
Aggregator     : None
MED            : None
Peer Router Id : 38.120.48.199

```

```

Neighbor-AS      : N/A
DB Orig Val      : N/A
Source Class     : 0
Add Paths Send   : Default
Last Modified    : 02h27m50s
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
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
DB Orig Val       : 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
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
-----

```

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
Interface Name : NotAvailable
Aggregator    : None
MED           : 0

```

```

Cluster          : mac-mobility:Seq:0/Static
Originator Id   : No Cluster Members
Flags           : Used Valid Best IGP
Route Source    : Internal
AS-Path         : 111
EVPN type       : MAC
ESI             : 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
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
Interface Name : NotAvailable
Aggregator    : None
MED           : 0
Peer Router Id : 10.20.1.2
Tag           : 1
Route Dist.   : 10.20.1.2:1
Final Orig Val : N/A

```

```

Source Class   : 0                               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                             Interface Name : NotAvailable
Aggregator AS  : None                             Aggregator     : None
Atomic Aggr.   : Not Atomic                       MED            : 0
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        : 111
EVPN type      : IP-PREFIX
ESI            : N/A                               Tag            : 1
Gateway Address: 00:00:01:00:01:02
Prefix         : 3.0.1.6/32                         Route Dist.     : 10.20.1.2:1
MPLS Label     : X
Route Tag      : W
Neighbor-AS    : 111
DB Orig Val    : N/A                               Final Orig Val  : N/A
Source Class   : 0                               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                             Interface Name : int-PE-4-PE-2
Aggregator AS  : None                             Aggregator     : None
Atomic Aggr.   : Not Atomic                       MED            : None
AIGP Metric    : None                             IGP Cost       : 10
Connector      : None
Community      : target:64500:2002 mac-nh:00:00:00:00:00:02

```

```

Cluster          : bgp-tunnel-encap:MPLS
Originator Id   : No Cluster Members
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
Add Paths Send  : Default
Last Modified   : 23h15m42s
Final Orig Val  : N/A
Dest Class      : 0
=====

```

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
AIGP Metric  : None
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
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : No As-Path
EVPN type    : MCAST-JOIN
Tag          : 0
Interface Name : int-PE-3-PE-2
Aggregator     : None
MED            : 0
IGP Cost       : 10
Peer Router Id : 192.0.2.2
  
```

```

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
Source Class  : 0
Add Paths Send : Default
Last Modified : 00h29m38s
Final Orig Val : N/A
Dest Class    : 0
    
```

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
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            : None
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

```

```

-----
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

```

```

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

```

RIB Out Entries

```

-----
Network : 10.10.12.0/24
Nexthop : 10.20.1.2
Route Dist. : 100:2
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           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 276: Output fields: BGP routes

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

Label	Description
	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: <ul style="list-style-type: none"> • u — used • s — suppressed • h — history • d — decayed • * — valid • i — igp • e — egp

Label	Description
	<ul style="list-style-type: none"> • ? — incomplete • > — best • S — sticky
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 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

Label	Description
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	<p>The step in the BGP decision process where a BGP route lost the tiebreak with the next better BGP route for the same prefix</p> <p>LocalPref — This route is not the best because the next better route has a higher LOCAL_PREF</p> <p>AIGP — This route is not the best because the next better route has a lower derived AIGP metric value</p> <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>

Label	Description
	<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	
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	

Label	Description
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
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

Label	Description
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

7705 SAR Gen 2

Output

The following output is an example of IS-IS route unreachable information, and [Table 277: 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] NextHop	Metric	Lvl/Typ	Ver. MT	SysID/Hostname AdminTag/SID[F]
10.20.1.3/32 0.0.0.0	UPA	1/Int.	2 0	Dut-B 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 277: 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 277: 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] NextHop	Metric	Lvl/Typ	Ver. MT	SysID/Hostname AdminTag/SID[F]
1.1.2.0/24 1.1.3.1	20	1/Int.	0 0	Dut-A 0
1.1.2.0/24 1.2.3.2	20	1/Int.	0 0	Dut-B 0
1.1.3.0/24 0.0.0.0	10	1/Int.	0 0	Dut-C 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          AdminTag/SID[F]
-----
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
1.2.5.0/24          20      1/Int.     8     Dut-B
1.2.3.2             0
1.3.4.0/24          10      1/Int.     8     Dut-C
0.0.0.0             0
1.3.5.0/24 [L]      30      1/Int.    11     Dut-B
1.2.3.2             0
1.4.5.0/24          20      1/Int.     8     Dut-D
1.3.4.4             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             0/1[NnP]
10.20.1.2/32        10      1/Int.     8     Dut-B

```

```

1.2.3.2          0      1/Int.    5      0/1002[NnP]
10.20.1.3/32     0      1/Int.    5      Dut-C
0.0.0.0          0      1/Int.    8      0/1003[NnP]
10.20.1.4/32     10     1/Int.    8      Dut-D
1.3.4.4          0      1/Int.    11     0/1004[NnP]
10.20.1.5/32 [L] 20     1/Int.    11     Dut-B
1.2.3.2          0      1/Int.    8      0/1005[NnP]
10.21.1.2/32     10     1/Int.    8      Dut-B
1.2.3.2          0      1/Int.    5      0
10.21.1.3/32     0      1/Int.    5      Dut-C
0.0.0.0          0      1/Int.    8      0
10.21.1.4/32     10     1/Int.    8      Dut-D
1.3.4.4          0      1/Int.    11     0
10.21.1.5/32 [L] 20     1/Int.    11     Dut-B
1.2.3.2          0      1/Int.    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]      Metric  Lvl/Typ  Ver.  SysID/Hostname
NextHop            MT      AdminTag/SID[F]
Alt-Nexthop        Alt-  Alt-Type
Metric
-----
1.2.3.0/24          10     1/Int.    8     Dut-C
0.0.0.0             0     1/Int.    8     0
1.2.4.0/24          20     1/Int.    8     Dut-D
1.3.4.4             0     1/Int.    8     0
1.2.5.0/24          20     1/Int.    8     Dut-B
1.2.3.2             0     1/Int.    8     0
1.3.4.0/24          10     1/Int.    8     Dut-C
0.0.0.0             0     1/Int.    11    0
1.3.5.0/24          30     1/Int.    11    Dut-B
1.2.3.2             0     1/Int.    30    0
1.3.4.4(L)          20     1/Int.    NP    NP
1.4.5.0/24          20     1/Int.    8     Dut-D
1.3.4.4             0     1/Int.    0     0
2.3.4.0/24          40     1/Int.    11    Dut-D
1.3.4.4             0     1/Int.    0     0
4.0.0.1/32          10     1/Int.    8     Dut-D
1.3.4.4             0     1/Int.    0     0/1[NnP]
10.20.1.2/32        10     1/Int.    8     Dut-B
1.2.3.2             0     1/Int.    0     0/1002[NnP]
10.20.1.3/32        0     1/Int.    5     Dut-C
0.0.0.0             0     1/Int.    0     0/1003[NnP]
10.20.1.4/32        10     1/Int.    8     Dut-D
1.3.4.4             0     1/Int.    0     0/1004[NnP]
10.20.1.5/32        20     1/Int.    11    Dut-B
1.2.3.2             0     1/Int.    0     0/1005[NnP]
1.3.4.4(L)          20     1/Int.    NP    NP
10.21.1.2/32        10     1/Int.    8     Dut-B
1.2.3.2             0     1/Int.    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	20	1/Int.	11	Dut-B
1.2.3.2			0	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 277: 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[RNP]
-----
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 277: 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	0/521[NnP]
1.1.1.12/32 [L]	10	1/Int.	7	Dut-B
1.2.3.2			0	0/522[NnP]
1.1.1.13/32	0	1/Int.	3	Dut-C
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	0/524[NnP]
1.1.1.15/32	10	1/Int.	7	Dut-E
1.3.5.5			0	0/525[NnP]
1.1.1.16/32 [L]	20	1/Int.	8	Dut-E
1.3.5.5			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
::			0	0
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
::			0	0
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 277: 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-Algorithm 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 277: 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	<p>Displays the metric of the route</p> <div>  Note: <ul style="list-style-type: none"> For an unreachable route, the short table view shows UPA as the metric value. In the detailed view, the real metric value with (UPA) shows for an unreachable route and the status indicates Unreachable. </div>
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

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 NHIP	Type(Dest) NHIF	Stat Cost[E2]	SID	SIDflgs
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
NHIF	NHIF	Cost[E2]		
A-NHIF(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
  NHIP              NHIF      Cost[E2]   Area                                PGID
  A-NHIP(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
  NHIP              NHIF      Cost[E2]   A-Type   PGID
  A-NHIP(L)         A-NHIF    A-Cost[E2] A-Type
-----
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      Type(Dest)      Stat
NHIP             NHIF            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      Type(Dest)      Stat
SID              NHIF            Cost[E2]
NHIP
-----
3ffe::100:900/120 IA (STUB)       D (F)
  DIRECT         4              200
3ffe::100:b01/128 IA (HOST)       N (R)
  4              NnPA
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" 2              100
3ffe::100:c00/120 IA (STUB)       N (R)
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" 2              200
3ffe::100:d00/120 IA (STUB)       D (F)
  DIRECT         2              100
3ffe::100:1602/128 IA (HOST)       N (R)
  5              NnPA
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" 2              200
3ffe::100:1800/120 IE (NET)        N (R)
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" 2              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 NHIP	Type(Dest) NHIF	Cost[E2]	Stat 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
=====
```

19.36 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
7705 SAR Gen 2

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 278: Output fields: PIM RP

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

19.37 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

7705 SAR Gen 2

Output

The following output is an example of a PIM RP-Hash configuration. [Table 279: Output fields: RP hash](#) 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 279: Output fields: RP hash

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.

19.38 rpki-session

rpki-session

Syntax

rpki-session [*ip-address*] [**detail**]

Context

[\[Tree\]](#) (show>router>origin-validation rpki-session)

Full Context

show router origin-validation rpki-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

7705 SAR Gen 2

Output

The following output is an example of RPKI session information.

Output Example

A:Dut-C# show router origin-validation rpki-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	
=====			

19.39 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
7705 SAR Gen 2

19.40 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

7705 SAR Gen 2

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
```

19.41 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

7705 SAR Gen 2

rsvp

Syntax

rsvp

Context

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

Full Context

show router rsvp

Description

Commands in this context display RSVP related information.

Platforms

7705 SAR Gen 2

```
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

7705 SAR Gen 2

```
rsvp
```

Syntax

rsvp

Context

[\[Tree\]](#) (monitor>router rsvp)

Full Context

monitor router rsvp

Description

Commands in this context monitor RSVP instances.

Platforms

7705 SAR Gen 2

19.42 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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

19.43 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.

Values	
ipv6	ipv6-prefix[/pref*: x:x:x:x:x:x:x (eight 16-bit pieces) x: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

7705 SAR Gen 2

Output

Router-Advertisement Table Output — The following output is an example of a router advertisement information, and [Table 280: Output fields: router advertisement](#) 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 280: Output fields: router advertisement

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
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

Label	Description
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 281: Output fields: router advertisement conflicts](#) 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 281: Output fields: router advertisement conflicts

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 282: Output fields: router advertisement interface](#) 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 282: Output fields: router advertisement interface

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

19.44 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

7705 SAR Gen 2

run-manual-spf

Syntax

run-manual-spf [externals-only]

Context

[\[Tree\]](#) (tools>perform>router>ospf3 run-manual-spf)

[\[Tree\]](#) (tools>perform>router>ospf run-manual-spf)

Full Context

tools perform router ospf3 run-manual-spf

tools perform router ospf run-manual-spf

Description

This command runs the Shorted Path First (SPF) algorithm.

Parameters

externals-only

Runs external only SPF.

Platforms

7705 SAR Gen 2

20 s Commands – Part I

20.1 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.

lsp-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

7705 SAR Gen 2

Output

The following output is an example of a PIM data MDT configuration. [Table 283: Output fields: 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-psmi 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-psmi
```

PIM Selective provider tunnels

```
=====
MD Src Address      MT Index      Num VPN SGs  MD RP for ASM  State
MD Grp Address      Multistream ID
-----
10.20.1.5           5798467       1            N/A            TX Joined
233.0.0.5           5
10.20.1.5           5798468       1            N/A            TX Joined
233.0.0.6           6
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 283: Output fields: 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 starg . The address of the Rendezvous Point (RP) displays if the type is configured as starRP .
MT Index	The index number
Num VP SGs	The VPN number

s-pmsi

Syntax

s-pmsi [**source** *mdSrcAddr*] [**group** *mdGrpAddr*] [**vpn-source** *vpnSrcAddr* **vpn-group** *vpnGrpAddr*]

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

7705 SAR Gen 2

20.2 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

7705 SAR Gen 2

Output

The following output is an example of SAA test information. [Table 284: Output fields: SAA](#) 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
           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
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 00:01:01:01:01:01 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 284: Output fields: SAA

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.

Label	Description
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.
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

7705 SAR Gen 2

20.3 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

7705 SAR Gen 2

Output

The following output is an example of SAII information.

Output Example

```
*A:Dut-E# show service sai-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
=====
```

20.4 sap

```
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-redirection [ingress | egress]
```

Context

```
[Tree] (show>service>id sap)
```

Full Context

show service id sap

Description

This command 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.

dhcp

Displays DHCP information.

mc-ring

Displays MC ring information.

mcac

Displays MCAC information.

mrp

Displays MRP information.

qos

Displays QoS information.

sap-stats

Displays SAP statistics.

stats

Displays statistics.

stp

Displays STP information.

sub-mgmt

Displays subscriber management information.

ipsec-gw

Displays IPSEC gateway information.

circuit-id

Specifies the circuit ID, up to 256 characters.

ieee-address

Specifies the IEEE address, up to 30 characters.

remote-id

Specifies the remote-ID, up to 256 characters.

host-lockout-policy

Displays the host lockout policy.

summary

Displays summary information.

queue-id

Specifies the queue ID.

Values 1 to 32

ingress

Displays ingress information.

egress

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

7705 SAR Gen 2

Output

The following output is an example of SAP information, and [Table 285: Output fields: service ID SAP](#) 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
Avl Static Hosts      : 0
Dynamic Hosts         : Enabled
Calling-Station-Id    : n/a
Tot Static Hosts      : 0

Application Profile: None
Transit Policy        : None

Oper Group            : (none)
Host Lockout Plcy     : n/a
Monitor Oper Grp      : (none)
Lag Link Map Prof     : (none)

Lag Per Link Hash
Class                 : 1
Oper Class            : 1
Weight                : 1
Override              : false
Oper Weight           : 1

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 Priority         : 128
Port Path Cost       : 10
Auto Edge            : Enabled
Admin Edge           : Disabled
Oper Edge            : N/A

```

```

Link Type      : Pt-pt          BDPDU Encap      : Dot1d
Root Guard     : Disabled       Active Protocol  : N/A
Last BDPDU from : N/A
CIST Desig Bridge : N/A        Designated Port  : N/A

Forward 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
MST BPDUs rcvd   : 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)
Ing ip-match tag   : none       Ing ipv6-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

-----
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)
LDRA              : Enabled
Interface-type    : client-facing
Interface-Id      : ascii-tuple
Remote-Id         : mac

-----
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
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 4 sap 1/1/c1/1:45 detail

```

=====
Service Access Points(SAP)
=====
Service Id       : 4
SAP              : 1/1/c1/1:45      Encap           : q-tag
Description      : (Not Specified)
Admin State      : Up              Oper State       : Up
Flags            : None
Multi Svc Site   : None
Last Status Change : 04/02/2024 18:08:35
Last Mgmt Change  : 04/02/2024 18:08:26
Sub Type         : regular
Dot1Q Ethertype  : 0x8100          QinQ Ethertype   : 0x8100
Split Horizon Group: (Not Specified)
Eth Seg Name     : vES-4
Admin MTU        : 9208            Oper MTU         : 9208
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        : og-4           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
Virtual Port      : (Not Specified)

FXC VLAN normalization mode : Double (Tags 9.10)

-----
ETH-CFM SAP specifics
-----
Tunnel Faults     : n/a           AIS              : Disabled
MC Prop-Hold-Timer : n/a
Squelch Levels    : None

```

```

Squelch Ctag 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)
Ing ip-match tag   : none                    Ing ipv6-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
Latency Budget     : 0 us

-----
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           : 3                    204
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
Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0
Off. LowPrio     : 0
Dro. HiPrio      : 0
Dro. LowPrio     : 0
For. InProf      : 0
For. OutProf     : 0

Octets

Egress Queue 1
For. In/InplusProf : 0
For. Out/ExcProf   : 0
Dro. In/InplusProf : 0
Dro. Out/ExcProf   : 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
Wgtd 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
Wgtd Avg Queue Polling Interval : 100 ms
Wgtd Avg HiWtrMark Polling Interval: 1000 s
-----
=====

```

```
show service id 1 sap 1/1/1 queue-group-redirection
```

```

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 285: Output fields: service ID SAP

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, NoSapIpAddr, SapParamMismatch, CemSap NoEcIdOrMacAddr, StandByForMcRing, ServiceMTUTooSmall, NoSapEpipeRing Node.

Label	Description
Last Status Change	Specifies the time of the most recent operating status change to this SAP.
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.
FXC VLAN normalization mode	The Flexible Cross Connect (FXC) VLAN normalization mode
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.

Label	Description
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.
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	pw-id[:qtag1[:qtag2]] pw-id[:qtag1[:qtag2]] pw-2:1.1

Label	Description
DHCP6	
LDRA	The state of the Lightweight DHCPv6 Relay Agent: <ul style="list-style-type: none"> • Enabled • Disabled
Interface Type	The LDRA interface type: <ul style="list-style-type: none"> • client-facing • network-facing • N/A
Interface-Id	The format for the Interface ID option: <ul style="list-style-type: none"> • ascii-tuple system name service ID sap ID For example: pe1 3000 1/x1/1/c1/1:2000.10 • vlan-ascii-tuple 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 • N/A
Remote-Id	The format for the Remote ID option: <ul style="list-style-type: none"> • mac The DHCPv6 client source MAC address encoded as six hexadecimal numbers • ASCII string in remote-id field The configured ascii encoded string • N/A

The following output is an example of distributed CPU Protection Policer Output information.

[Table 286: Output fields: distributed CPU protection policer](#) 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
Operational (adapted) rate parameters:
  Oper. Packets       : 5 ppi
  Oper. Initial Delay : 6 packets
  Oper. Depth         : 0 packets

Hold-Down Remain.    : none
Oper. Within         : 8 seconds

Policer-Name         : dhcp
Card/FP              : 1/1
Protocols Mapped     : dhcp
Exceed-Count         : 0
Detec. Time Remain   : 0 seconds
Operational (adapted) rate parameters:
  Oper. Kbps          : 2343 kbps
  Oper. Depth         : 0 bytes

Policer-State        : Conform
Hold-Down Remain.    : none
Oper. MBS            : 240 kilobytes

... (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
Protocols Mapped  : arp, pppoe-pppoa
Exceed-Count      : 0
All Dyn-Plcr Alloc. : False
Operational (adapted) rate parameters:
  Oper. Packets    : 10 ppi
  Oper. Initial Delay: 8 packets
  Oper. Depth      : 0 packets

Policer-State     : conform
Oper. Within      : 8 seconds

```

```
-----
Dynamic-Policer (Protocol)
-----
```

```

Protocol(Dyn-Plcr) : arp
Card/FP            : 1/1
Exceed-Count       : 0
Detec. Time Remain : 0 seconds
Dyn-Policer Alloc. : False
Operational (adapted) rate parameters: unknown

Protocol-State     : not-applicable
Hold-Down Remain. : none

```

```

Protocol(Dyn-Plcr) : pppoe-pppoa
Card/FP            : 1/1
Exceed-Count       : 0
Detec. Time Remain : 0 seconds
Dyn-Policer Alloc. : False
Operational (adapted) rate parameters: unknown

Protocol-State     : not-applicable
Hold-Down Remain. : none

```

Table 286: Output fields: distributed CPU protection policer

Label	Description
Distributed CPU Protection Policy	The DCP policy assigned to the object.
Policer-Name	The configured name of the static policer
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 XMAs).
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 detail 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)

Label	Description
	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
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 287: Output fields: QoS policer hierarchy SAP

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		
<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

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

7705 SAR Gen 2

Output

The following output is an example of SAP scheduler hierarchy information, and [Table 288: Output fields: QoS scheduler hierarchy SAP](#) 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 288: Output fields: QoS scheduler hierarchy SAP

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	
sap-id	null [port-id lag-id]
	dot1q [port-id lag-id]:qtag1
	qinq [port-id lag-id]:qtag1.qtag2
	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
	ipsec keyword
	id 1 to 4
	tag 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

7705 SAR Gen 2

Output

The following output is an example of scheduler-stats SAP information, and [Table 289: Output fields: QoS scheduler stats SAP](#) 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 289: Output fields: QoS scheduler stats SAP

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	[port-id bundle-id bpgrp-id lag-id aps-id]
	dot1q	[port-id bundle-id bpgrp-id lag-id aps-id]:qtag1
	qinq	[port-id bundle-id bpgrp-id lag-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 [1to8000]
	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
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 128
eth-tun-sap-id	0 to 4094
lag-id	lag-id
lag	keyword
id	1 to 800
pw-id	pw-id
pw	keyword
id	1to 10239
qtag1	0 to 4094
qtag2	*, null, 0 to 4094
tunnel-id	tunnel-id.[private public]:tag
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

7705 SAR Gen 2

Output

The following output is an example of H-QoS aggregate rate limit per SAP output, and [Table 290: Output fields: H-QoS aggregate rate limit per SAP](#) 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 290: Output fields: H-QoS aggregate rate limit per SAP

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the limit-unused-bandwidth 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	
null	[port-id lag-id]
dot1q	[port-id lag-id]:qtag1
qinq	[port-id lag-id]:qtag1.qtag2
cem	slot/mda/port.channel
ima-grp	[bundle-id[:vpi/vci vpi vpi1.vpi2]
port-id	slot/mda/port[.channel]
lag-id	lag-id
	lag keyword
	id 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

7705 SAR Gen 2

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	port-id lag-id	
dot1q	{port-id lag-id}:{qtag1 cp-conn-prof-id}	
qinq	{port-id lag-id}:{qtag1 cp-conn-prof-id}.{qtag2 cp-conn-prof-id}	
	cp: keyword	
	conn-prof-id: 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-id	

```
lag: keyword
id: 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

7705 SAR Gen 2

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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

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.

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 cp-conn-prof-id]
	qinq	port-id bundle-id bpgrp-id lag-id pw-id:[qtag1 cp-conn-prof-id].[qtag2 cp-conn-prof-id]
	cp	keyword
	conn-prof-id	1 to 8000

cem	<i>slot/mda/port.channel</i>	
ima-grp	bundle-id [:vpi/vci vpi vpi1.vpi2 cp.conn-prof-id]	
	cp	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
	esat-id/slot/port	
	pxc-id.sub-port	
aps-id	aps-group-id[.channel]	
	aps	keyword
	<i>group-id</i>	1 to 128
ccag-id	ccag-id.path-id[cc-type]:cc-id	
	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>	1 to 4094
eth-tunnel	eth-tunnel-id[:eth-tun-sap-id]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	lag-id	
	lag	keyword
	<i>id</i>	1 to 800
pw-id	pw-id	
	pw	keyword
	<i>id</i>	1 to 10239
qtag1	* 0 to 4094	
qtag2	* null 0 to 4094	
tunnel-id	tunnel-id.private public:tag	
	tunnel	keyword
	<i>id</i>	1 to 16

0 to 4094

0 to 4094

qtag2 : * | 0 to 4094

The values depends on the encapsulation type configured for the interface. [Table 291: qtag values by port and encapsulation type](#) describes the allowed values for the port and encapsulation types.

Table 291: 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.
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

7705 SAR Gen 2

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.

Values		
null	port-id bundle-id bpgrp-id lag-id aps-id eth-sat-id	
dot1q	port-id bundle-id bpgrp-id lag-id aps-id pw-id eth-sat-id:[qtag1 cp-conn-prof-id]	
qinq	port-id bundle-id bpgrp-id lag-id pw-id eth-sat-id:[qtag1 cp-conn-prof-id].[qtag2 cp-conn-prof-id]	
	cp	keyword
	conn-prof-id	1 to 8000
cem	slot/mda/port.channel	
ima-grp	bundle-id [:vpi/vci vpi vpi1.vpi2 cp.conn-prof-id]	
	cp	keyword
	conn-prof-id	1 to 8000

port-id	<i>slot/mda/port[.channel]</i>	
aps-id	aps-group-id [.channel]	
	aps	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	lag-id lag-string	
	lag	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	pw-id	
	pw	keyword
	<i>id</i>	1 to 32767
qtag1	null 0 to 4094	
qtag2	* null 0 to 4094	
tunnel-id	tunnel-id .private public:tag	
	tunnel	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
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

name
Specifies the arbiter name, up to 32 characters.

root
Specifies the arbiter root, up to 32 characters.

Platforms

7705 SAR Gen 2

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	port-id bundle-id bpgrp-id lag-id aps-id eth-sat-id	
dot1q	port-id bundle-id bpgrp-id lag-id aps-id pw-id eth-sat-id:[qtag1] cp-conn-prof-id	
qinq	port-id bundle-id bpgrp-id lag-id pw-id eth-sat-id:[qtag1 cp-conn-prof-id].[qtag2 cp-conn-prof-id]	
	cp	keyword
	conn-prof-id	1 to 8000
cem	slot/mda/port.channel	
ima-grp	bundle-id [:vpi/vci vpi vpi1.vpi2 cp.conn-prof-id]	
	cp	keyword
	conn-prof-id	1 to 8000
port-id	slot/mda/port[.channel]	
aps-id	aps-group-id[.channel]	
	aps	keyword
	group-id	1 to 128
eth-tunnel	eth-tunnel-id[:eth-tun-sap-id]	

	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	lag-id lag-string	
	lag	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	pw-id	
	pw	keyword
	<i>id</i>	1 to 32767
qtag1	null 0 to 4094	
qtag2	* null 0 to 4094	
tunnel-id	tunnel-id.private <i>public:tag</i>	
	tunnel	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
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

- name**
Specifies the arbiter name, up to 32 characters.
- root**
Specifies the arbiter root, up to 32 characters.

Platforms

7705 SAR Gen 2

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	port-id bundle-id bpgrp-id lag-id aps-id eth-sat-id	
dot1q	port-id bundle-id bpgrp-id lag-id aps-id pw-id eth-sat-id:[qtag1] cp-conn-prof-id	
qinq	port-id bundle-id bpgrp-id lag-id pw-id eth-sat-id:[qtag1 cp-conn-prof-id].[qtag2 cp-conn-prof-id]	
	cp	keyword
	conn-prof-id	1 to 8000
cem	slot/mda/port.channel	
ima-grp	bundle-id [:vpi/vci vpi vpi1.vpi2] cp.conn-prof-id	
	cp	keyword
	conn-prof-id	1 to 8000
port-id	slot/mda/port[.channel]	
aps-id	aps-group-id[.channel]	
	aps	keyword
	group-id	1 to 128
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-string	
	lag	keyword
	<i>id</i>	1 to 800
pw-id	<i>string</i>	23 characters max.
	pw-id	
	pw	keyword
qtag1	<i>id</i>	1 to 32767
	null 0 to 4094	
	* null 0 to 4094	
tunnel-id	tunnel-id.private <i>public:tag</i>	
	tunnel	keyword
	<i>id</i>	1 to 16
eth-sat-id	<i>tag</i>	0 to 4094
	esat-id/slot/port	
	esat	keyword
pxc-id	<i>id</i>	1 to 20
	pxc-id.sub-port	
	pxc	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

port-id
Specifies the port ID.
Values slot/mda/port

Platforms
7705 SAR Gen 2

20.5 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
7705 SAR Gen 2

Output
The following output is an example of QoS SAP egress information, and [Table 292: Output fields: QoS SAP egress](#) describes the output fields.

```
*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 292: Output fields: QoS SAP egress

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).
PIR Oper	The administrative PIR specified by the user.
PIR Rule	min — The operational PIR for the queue will be equal to or greater than the administrative rate specified using the rate command. max — The operational PIR for the queue will be equal to or less than the administrative rate specified using the rate command.

Label	Description
	closest — The operational PIR for the queue will be the rate closest to the rate specified using the rate command.
CBS	def — Specifies that the CBS value reserved for the queue. value — Specifies the value to override the default reserved buffers for the queue.
MBS	def — Specifies that the MBS value is set by the def-mbs function. value — Specifies the value to override the default maximum size for the queue.
HiPrio	Specifies the percentage of buffer space for the queue, used exclusively by high-priority packets.
PIR Lvl/Wt	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. 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.
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	Explicit — Specifies the egress IEEE 802.1p (dot1p) bits marking for <i>fc-name</i> . Default — Specifies that the default dot1p value (0) is used.
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.

Label	Description
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.

20.6 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

7705 SAR Gen 2

Output

The following output is an example of QoS SAP ingress information, and [Table 293: Output fields: QoS SAP ingress](#) 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 293: Output fields: QoS SAP ingress

Label	Description
Policy-Id	The ID that uniquely identifies the policy.

Label	Description
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 SAP ingress queues) or out an egress interface (for SAP egress queues).
PIR Oper	The administrative PIR specified by the user.

Label	Description
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	<p>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.</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>

Label	Description
	Low — Specifies that the low enqueueing parameter for a packet decreases the likelihood of enqueueing the packet when the ingress queue is congested.
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 fc <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.
DSCP	Specifies a DiffServ Code Point (DSCP) name used for an ingress SAP QoS policy match.

Label	Description
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.

20.7 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	
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> [:vpi/vci vpi <i>vpi1.vpi2</i>]
port-id	<i>slot/mda/port</i> [. <i>channel</i>]
aps-id	aps-group-id [. <i>channel</i>] aps 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
lag-id	<i>lag-id</i> <i>lag</i> 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
7705 SAR Gen 2

Output
The following output is an example of service SAP information, and [Table 294: Output fields: SAP](#) 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 294: Output fields: SAP

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

20.8 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

7705 SAR Gen 2

20.9 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

7705 SAR Gen 2

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. QoS	Ing. Fltr	Egr. QoS	Egr. Fltr	Adm	Opr
1/1/18:0	89	1	none	1	none	Up	Down
Number of SAPs : 1							
*A:ALA-48#							

20.10 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

7705 SAR Gen 2

Output

The following output is an example of cron schedule information. The following table describes the output fields.

Output Example

A:siml>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 295: Output fields: cron schedule

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. 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.

Label	Description
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.

20.11 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

7705 SAR Gen 2

20.12 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

7705 SAR Gen 2

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#

20.13 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

7705 SAR Gen 2

Output

The following output is an example of scheduler policy information, and [Table 296: Output fields: QoS scheduler policy](#) 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 296: Output fields: QoS scheduler policy

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	<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.
PIR	Specifies the PIR rate.
CIR	Specifies the CIR rate.

Label	Description
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.

20.14 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.15 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

7705 SAR Gen 2

20.16 script

```
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

7705 SAR Gen 2

Output

The following output is an example of show script command information, and [Table 297: Output fields: script](#) describes the output fields.

Output Example

```
A:siml>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 297: Output fields: script

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.

20.17 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.18 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

7705 SAR Gen 2

Output

The following output is an example of script policy information, and [Table 298: Output fields: script policy](#) 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 298: Output fields: script policy

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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.19 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
7705 SAR Gen 2

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
=====
```

20.20 sdp

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.
- 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

7705 SAR Gen 2

Output

The following command displays SDP information and [Table 299: Output fields: service ID SDP](#) 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 299: Output fields: service ID SDP](#) 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                               Type           : Spoke
VC Type          : Ether                               VC Tag          : n/a
Admin Path MTU   : 0                                   Oper Path MTU   : 9186
Far End          : 10.20.1.2                           Delivery        : MPLS

Admin State      : Up                                   Oper State      : Up
Acct. Pol       : None                                 Collect Stats   : Disabled
Ingress Label    : 2048                                Egress Label    : 2048
Ing mac Fltr     : n/a                                 Egr mac Fltr    : n/a
Ing ip Fltr      : n/a                                 Egr ip Fltr     : n/a
Ing ipv6 Fltr    : n/a                                 Egr ipv6 Fltr   : n/a
Admin ControlWord : Not Preferred                       Oper ControlWord : False
Last Status Change : 05/31/2007 00:45:43               Signaling       : None
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                          Total MAC Addr   : 0
Learned MAC Addr   : 0                                  Static MAC Addr   : 0

MAC Learning      : Enabled                             Discard Unkwn Srce: Disabled
MAC Aging         : Enabled
L2PT Termination  : 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                               Oper State        : Up
Admin State        : Up
Time Since Last Tr*: 00h26m35s

Lsp Name           : A_B_2                               Oper State        : Up
Admin State        : Up
Time Since Last Tr*: 00h26m35s

Lsp Name           : A_B_3                               Oper State        : Up
Admin 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 299: Output fields: service ID SDP](#) 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
Spoke Descr      : (Not Specified)
VC Type          : n/a
Admin Path MTU   : 1600
Delivery         : MPLS
Far End          : 10.20.1.1
Oper Tunnel Far End: 10.20.1.1
LSP Types        : LDP
Hash Label       : Disabled
Oper Hash Label  : Disabled
Entropy Label    : Disabled
Type             : Spoke
VC Tag           : n/a
Oper Path MTU    : 1600
Tunnel Far End   :
Hash Lbl Sig Cap : Disabled
Admin State      : Up
MinReqd SdpOperMTU : n/a
Adv Service MTU  : 1500
Oper State       : Up
Acct. Pol        : None
Collect Stats    : Disabled
Ingress Label    : 524236
Egress Label     : 524257
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     : BFD_VCCV
BFD-Enabled      : yes
BFD-Encap        : ipv4
BFD Fail Action   : down
BFD Oper State   : connected
BFD WaitForUpTimer : 0 secs
Signaling        : n/a
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
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
Max Drop Count : 3
Statistics      :
I. Fwd. Pkts.   : 0
I. Fwd. Octs.   : 0
E. Fwd. Pkts.   : 804
Hello Msg Len   : 0
Hold Down Time : 10
I. Dro. Pkts.   : 0
I. Dro. Octs.   : 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
Default LSP        : Uknwn
Multicast LSP      : None
EnforceDSTELspFc  : Disabled

=====
FC Mapping Table
=====
FC Name           LSP Name
-----
No FC Mappings

-----
Segment Routing
-----
ISIS              : disabled
OSPF               : disabled
TE-LSP            : disabled

-----
Number of SDPs : 1
=====

```

Table 299: Output fields: service ID SDP

Label	Description
Sdp Id	The SDP identifier.

Label	Description
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.
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.

Label	Description
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

7705 SAR Gen 2

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 VPort    Monitor Oper 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

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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 VPort    Monitor Oper 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. Octets.       : 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
Admin Path MTU        : 1514
Delivery              : MPLS
Far End               : 10.20.1.3
Tunnel Far End        : 10.20.1.3
Admin State           : Up
Signaling              : TLDP
Acct. Pol              : None
Last Status Change    : 06/13/2017 17:14:05
Last Mgmt Change       : 06/13/2017 17:17:19
Bw BookingFactor      : 100
Oper Max BW(Kbps)     : 0
Net-Domain             : default
FPE LSP Id            : 0
Weighted ECMP          : Enabled
Flags                  : None
Mixed LSP Mode Information :
Mixed LSP Mode         : Disabled
KeepAlive Information :
Admin State            : Disabled
Hello Time             : 10
Hello Timeout          : 5
Max Drop Count         : 3
SDP Source              : manual
Oper Path MTU          : 1514
LSP Types               : LDP
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
Active LSP Type         : LDP
Oper State              : Disabled
Hello Msg Len           : 0
Unmatched Replies       : 0
Hold Down Time          : 10
```

```
Tx Hello Msgs      : 0
Src B-MAC LSB      : <none>
Ctrl PW Active     : n/a
Rx Hello Msgs      : 0
Ctrl PW VC ID      : <none>

-----
LDP Information :
-----
LDP LSP Id         : 65662
-----
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                 : 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

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Output

The following output is an example of SDP information, and [Table 300: Output fields: service SDP port](#) 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 VPort    Monitor Oper 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)
=====

*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)

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
=====
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 300: Output fields: service SDP port

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.
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

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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      Monitor
          Shaper  Oper
          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)
=====

*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)

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
=====
```

The following output is an example of SDP information, and [Table 301: Output fields: service SDP](#) 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
Far End          : 10.10.10.104
Admin State      : Up
Flags            : SignalingSessDown TransportTunnDown
Signaling        : TLDP
Last Status Change : 02/01/2007 09:11:39
Last Mgmt Change  : 02/01/2007 09:11:46
Oper Path MTU    : 0
Delivery         : GRE
Oper State       : Down
VLAN VC Etype    : 0x8100
Adv. MTU Over.   : No

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

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
Far End          : 10.10.10.104
Admin State      : Up
Flags            : SignalingSessDown TransportTunnDown
Signaling        : TLDP
Last Status Change : 02/01/2007 09:11:39
Last Mgmt Change  : 02/01/2007 09:11:46
Oper Path MTU    : 0
Delivery         : MPLS
Oper State       : Down
VLAN VC Etype    : 0x8100
Adv. MTU Over.   : No

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

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 301: Output fields: service SDP

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.

Label	Description
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.
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	<p>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.</p> <p>If the SDP type is GRE, then the following message displays: SDP delivery mechanism is not MPLS.</p>

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

7705 SAR Gen 2

Output

The following output is an example of SDP information.

[Table 302: Output fields: service SDP](#) 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
Learned MAC Addr  : 0                     Total 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
Auto Learn Mac Prot : Disabled             RestProtSrcMacAct  : Disable

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 Port Id   : N/A
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
=====
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                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> 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
Far End             : 203.20.1.201
Admin State         : Up
Signaling           : TLDP
Acct. Pol           : None
Last Status Change  : 02/12/2010 22:37:08
Last Mgmt Change    : 02/12/2010 22:37:03
Bw BookingFactor    : 100
Oper Max BW(Kbps)   : 0
Net-Domain          : default
Mixed LSP Mode      : Enabled
Revert Time         : 0
Flags               : None

Oper Path MTU       : 9182
Delivery            : MPLS/LDP
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
Revert Count Down   : n/a

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

-----
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
Default LSP          : Uknwn
EnforceDSTELspFc    : Disabled
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, O = 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 Qinq-Vc   : Disabled
Force Vlan-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)                           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

```

```

-----
ETH-CFM SDP-Bind specifics
-----
Squelch Levels      : None
-----

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
=====

```

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 302: Output fields: service SDP

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.

Label	Description
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.
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:

Label	Description
	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 vlan 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.
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.

Label	Description
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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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#
```

20.21 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
7705 SAR Gen 2

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#
```

20.22 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

7705 SAR Gen 2

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#
```

20.23 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

7705 SAR Gen 2

Output

The following output is an example of SDP using information, and [Table 303: Output fields: service SDP using](#) 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-tag  Leaf-Ac
-----
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 303: Output fields: service SDP using

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.

Label	Description
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.

20.24 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
7705 SAR Gen 2

20.25 security

security

Syntax

security

Context

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

Full Context

show system security

Description

Commands in this context display security configuration information.

Platforms

7705 SAR Gen 2

security

Syntax

security

Context

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

Full Context

tools dump security

Description

Commands in this context dump tools for security.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

security

Syntax

security

Context

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

Full Context

tools perform security

Description

This command enables tools for testing security.

Platforms

7705 SAR Gen 2

20.26 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

7705 SAR Gen 2

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 PlcyId	Policy ParamsId	LocalIp	RemoteIp
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#
```

20.27 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.28 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

7705 SAR Gen 2

20.29 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

7705 SAR Gen 2

Output

The following output is an example of telemetry sensor group information and [Table 304: Output fields: sensor group](#) 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 304: Output fields: sensor group

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.

20.30 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: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
7705 SAR Gen 2

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
ConnTimeout : 1800
Curr Sess   : 2
Tests Done  : 5
Tests Abort : 0
TstPktsRx   : 999
Max Conn    : 32
Conn Reject : 2
Max Sess    : 32
Tests Rej   : 0
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
Curr Conn   : 1
Conn Reject : 0
Curr Sess   : 2
Tests Done  : 5
Tests Abort : 0
TstPktsRx   : 999
Oper State  : Up
Max Conn    : 32
Max Sess    : 32
Tests Rej   : 0
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
Curr Conn   : 0
Conn Reject : 0
Curr Sess   : 0
Tests Done  : 0
Tests Abort : 0
TstPktsRx   : 0
Oper State  : Up
Max Conn    : 32
Max Sess    : 32
Tests Rej   : 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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.31 server-stats

server-stats

Syntax

server-stats

Context

- [Tree] (show>router>dhcp>server server-stats)
- [Tree] (show>router>dhcp6>server server-stats)

Full Context

- show router dhcp local-dhcp-server server-stats
- show router dhcp6 local-dhcp-server server-stats

Description

This command displays DHCP or DHCP6 server statistics.

Platforms

- 7705 SAR Gen 2

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 305: Output fields: server statistics describes server stats show command output fields.

Table 305: Output fields: server statistics

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
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

Field	Description
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
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

Field	Description
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>dhcp>server server-stats)
[Tree] (clear>router>dhcp6>server server-stats)

Full Context

clear router dhcp local-dhcp-server server-stats
clear router dhcp6 local-dhcp-server server-stats

Description

This command clears all local DHCP or DHCPv6server statistics.

Platforms

7705 SAR Gen 2

20.32 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

7705 SAR Gen 2

20.33 servers

servers

Syntax

servers

servers all

Context

[\[Tree\]](#) (show>router>dhcp6 servers)

[\[Tree\]](#) (show>router>dhcp servers)

Full Context

show router dhcp6 servers

show router dhcp servers

Description

This command lists the local DHCP or DHCP6 servers.

Parameters

all

Displays a complete list of local DHCP or DHCP6 servers.

Platforms

7705 SAR Gen 2

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#
```

20.34 service

service

Syntax

service

Context

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

Full Context

clear service

Description

Commands in this context clear services commands.

Platforms

7705 SAR Gen 2

service

Syntax

service

Context

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

Full Context

show service

Description

Commands in this context display services related information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

20.35 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

7705 SAR Gen 2

Output

The following shows an example of **service name-using** information.

[Table 306: Output fields: service name using](#) 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 306: Output fields: service name using

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.

20.36 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. <div><div>Values1 to 17407</div><div>DefaultServices bound to any SDP ID.</div></div>

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

7705 SAR Gen 2

Output

The following output is an example of service using information, and [Table 307: Output fields: service using](#) 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#
```

Table 307: Output fields: service using

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.
Last Mgmt Change	The date and time of the most recent management-initiated change to this service.

20.37 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, frdci, atmsdu, atmcell, atmvc, atmvc, 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 SAII (Source Attachment Individual Identifier).

Values <number>:<number> | <a.b.c.d>:<number>

taii

Specifies the TAII 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

7705 SAR Gen 2

20.38 session

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

7705 SAR Gen 2

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 | recv] overload [fec-type fec-type]  
session [sent | recv] 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:x (eight 16-bit pieces) x:x:x:x:x:x:d.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

7705 SAR Gen 2

Output

Table 308: Output fields: LDP session describes the LDP session output fields.

Table 308: Output fields: LDP session

Label	Description
Peer LDP Id	The IP address of the LDP peer.
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	The number of messages sent.
Mesg Sent	
Msg Rcvd	The number of messages received.

Label	Description
Mesg Rcvd	
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
Mesg Sent           : 36           Mesg 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 recv ip-
addr 3ffe::a14:102
=====
LDP Session Local-Addresses
=====
-----
Session with Peer 10.20.1.2:0,
    Local 10.20.1.1:0

```

```

-----
IPv6 Recv 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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-address* **prefix** *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		
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
7705 SAR Gen 2

Output
The following output is an example of BFD session information, and [Table 309: Output fields: BFD session](#) 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 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          State      Tx Pkts  Rx Pkts
Rem Addr/Info/SdpId 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
10.20.1.6/32        Up         N/A       N/A
10.20.1.6           3          10        10
mplsLsp             cpm-np     N/A       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 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          State      Tx Pkts  Rx Pkts
Rem Addr/Info/SdpId 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
10.20.1.6/32        Up         N/A       N/A
10.20.1.6           3          10        10
mplsLsp             cpm-np     N/A       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                   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

```

```
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 Min Tx   : 10                               Local Mult     : 3
Last Sent (ms) : 5                               Local Min Rx   : 10
Type           : cpm-np
Remote Discr   : 1885                               Remote State   : Up (3)
Remote Diag    : 0 (None)                           Remote Mode    : Async
Remote Min Tx  : 10                               Remote Mult    : 3
Last Recv (ms) : 1                               Remote Min Rx  : 10
```

```
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 Min Tx   : 10                               Local Mult     : 3
Last Sent (ms) : 6                               Local Min Rx   : 10
Type           : cpm-np
Remote Discr   : 270                               Remote State   : Up (3)
Remote Diag    : 0 (None)                           Remote Mode    : Async
Remote Min Tx  : 10                               Remote Mult    : 3
Last Recv (ms) : 8                               Remote Min Rx  : 10
```

* indicates that the corresponding row element may have been truncated.

```
A:node-2# show router bfd session ipv4
```

BFD Session

Interface	State	Tx Intvl	Rx Intvl	Multipl
Remote Address	Protocols	Tx Pkts	Rx Pkts	Type
port-1-1	Up (3)	500	500	3
10.1.1.3	pim isis	51532	51279	iom
port-1-2	Up (3)	500	500	3
10.2.1.3	pim isis	51529	51279	iom

```

port-1-3          Up (3)          500      500      3
  10.3.1.3        pim isis        51529    51279    iom
port-1-4          Up (3)          500      500      3
  10.4.1.3        pim isis        51529    51279    iom
port-1-5          Up (3)          500      500      3
  10.5.1.3        pim isis        51529    51279    iom
port-1-6          Up (3)          500      500      3
  10.6.1.3        pim isis        51529    51279    iom
...
=====

A:node-2# show router bfd session ipv6
=====
BFD Session
=====
Interface          State          Tx Intvl  Rx Intvl  Multipl
Remote Address     Protocols      Tx Pkts   Rx Pkts   Type
-----
port-1-1           Up (3)         10        10        3
  3ffe::a01:103    static bgp     N/A       N/A       cpm-np
port-1-1           Up (3)         10        10        3
  fe80::a0a:a03    pim isis ospf3 N/A       N/A       cpm-np
port-1-2           Up (3)         10        10        3
  3ffe::a02:103    static bgp     N/A       N/A       cpm-np
port-1-2           Up (3)         10        10        3
  fe80::a0a:a03    pim isis ospf3 N/A       N/A       cpm-np
port-1-3           Up (3)         10        10        3
  3ffe::a03:103    static bgp     N/A       N/A       cpm-np
port-1-3           Up (3)         10        10        3
  fe80::a0a:a03    pim isis ospf3 N/A       N/A       cpm-np
port-1-4           Up (3)         10        10        3
  3ffe::a04:103    static bgp     N/A       N/A       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
Oper State : Up
Recd Msgs : 240
Up Time : 0d 00:03:58
Down Time : None
Tunnel Id : 1
Protocols : lsp
Sent Msgs : 240
Up Transitions : 1
Down Transitions : 0
Version Mismatch : 0

Forwarding Information
Local Discr : 1
Local Diag : 0 (None)
Local Mode : Async
Local Min Tx : 1000
Last Sent : 07/28/2015 19:05:13
Type : central
Remote Discr : 1
Remote Diag : 0 (None)
Remote Min Tx : 1000
Last Recv : 07/28/2015 19:05:13
Local State : Up
Local Mult : 3
Local Min Rx : 1000
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      Up    4111222336 3111222336
  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)          10        10        3
  10.1.3.2          ospf2          N/A       N/A       cpm-np
ies-3-10.1.4.3      Up (3)          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
Protocols      : static
Rx Interval    : 10
Multiplier     : 3
Up Time        : 1d 19:03:28
Down Time      : None
Oper State     : Up (3)
Tx Interval    : 10
Echo Interval  : 0
Up Transitions : 2
Down Transitions : 1
Version Mismatch : 0

Forwarding Information
Local Discr    : 19269
Local Diag     : 0 (None)
Local Min Tx   : 10
Last Sent (ms) : 6
Type           : cpm-np
Local State    : Up (3)
Local Mode     : Async
Local Mult     : 3
Local Min Rx   : 10

```

```

Remote Discr   : 5101
Remote Diag    : 0 (None)
Remote Min Tx  : 1000
Last Recv (ms) : 367

Remote State   : Up (3)
Remote Mode    : Async
Remote Mult    : 3
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 309: Output fields: BFD session

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

7705 SAR Gen 2

Output

The following output is an example of RSVP session information.

[Table 310: Output fields: RSVP session](#) describes RSVP session output fields.

Table 310: Output fields: RSVP session

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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	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
                   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
-----	-----	-----	-----

Output example —TWAMP-Light Test

```

-----
TWAMP-Light Test Configuration and Status
-----
Test ID           : 1           Admin State       : Down
Oper State        : Down       Pad Size          : 0 octets
On-Demand Duration: Not Applicable On-Demand Remaining: Not Applicable
Interval          : 1000 ms    Record Stats      : delay
CHLI Threshold    : 5 HLIs     Frames Per Delta-T : 1 frames
Consec Delta-Ts   : 10        FLR Threshold     : 50%
HLI Force Count   : no        IPv6 UDP Checksum 0: Allow
Detectable Tx Err : none
Session Sender ID : none
Str Delay Tmpl: (Not Specified)

```

Table 311: Output fields: TWAMP-Light Test

Label	Description
Test ID	The numerical value, between 0 to 2147483647, that is assigned to the protocol-specific test
Admin State	The administrative state of the testUp – The test has been enabled by configurationDown – The test has not been enabled by configuration
Oper State	The operational state of the testUp – The test is administratively up and currently transmitting, attempting to transmit packets, or ready to transmit packetsDown – The test is administratively down or an OAM-PM session configured with session-type on-demand has not been enabled using the global CLI oam oam-pm session start command
CHLI Threshold	Displays the Consecutive High Loss Interval (CHLI) threshold
FLR Threshold	Displays the Frame Loss Ratio (FLR) threshold for the test
Interval	Displays the test interval, in milliseconds, between the received messages to maintain the session
Record Stats	Displays the type of statistics recorded for the TWAMP-Light test
IPv6 UDP Checksum 0	Displays whether the processing of received IPv6 UDPchecksum 0 packets is allowed or disallowed
Detectable Tx Error	Displays the detected error condition that may prevent the test packet from being sent
Session Sender ID	Displays the session sender identifier (value, between 1 to 65535)

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

7705 SAR Gen 2

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: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.

- Values3 to 60
- Default10 seconds

repeat

Configures how many times the command is repeated.

- Values1 to 999
- Default10

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.

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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 *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

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21 s Commands – Part II

21.1 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.

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Output

[Table 312: Output fields: LDP session parameters](#) describes the LDP session-parameters output.

Table 312: Output fields: LDP session parameters

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         :
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
Export Policies    : None
IPv6 Prefix Fec Cap: Disabled
-----
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         :
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
Export Policies    : None
IPv6 Prefix Fec Cap: Enabled
=====
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         :
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
Export Policies    : None
IPv6 Prefix Fec Cap: Enabled
-----
Peer : 3ffe::a14:103
-----
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         :
-----
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
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         :
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
Export Policies    : None
IPv6 Prefix Fec Cap: Enabled
-----
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
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         :
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
Export Policies    : None
IPv6 Prefix Fec Cap: Disabled
-----
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
-----
Adv Adj Addr Only  : Disabled
Fec Limit Threshold: 90
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#
```

21.2 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.

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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>gsmp#
A:active>show>service>id>gsmp# 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>gsmp#

```

The following table describes service ID GSMP sessions output fields:

Table 313: Output fields: service ID GSMP sessions

Label	Description
Port	The port ID number
Ngbr-IpAddr	The neighbor IP address
Gsmp-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>gsmp# 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>gsmp
```

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*] [**l2-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.

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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

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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	
=====				

21.3 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 *7705 SAR Gen 2 Quality of Service Guide*.

Platforms

7705 SAR Gen 2

21.4 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

7705 SAR Gen 2

Output

The following output is an example of OSPFv2 sham-link neighbor information and [Table 314: Output fields: OSPF sham links](#) 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           Last Enabled      : 08/12/2021 13:09:05
Admin Status      : Enabled            Oper State         : Point To Point
```

```

Transit Delay      : 1 sec      Retrans Intrvl    : 5 sec
Hello Intrvl      : 1 sec      Rtr Dead Intrvl   : 3 sec
Cfg Metric        : 10         Auth Type         : None
If Events         : 1
Tot Rx Packets    : 0          Tot Tx Packets     : 32
Rx Hellos         : 0          Tx Hellos          : 32
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
Discards          : 0          Tx Failures        : 0
                  Retransmits   : 0

Bad Networks      : 0          Bad Dest Addrs     : 0
Bad Areas         : 0          Auth Failures      : 0
Bad Auth Types    : 0          Bad Pkt Types      : 0
Bad Neighbors     : 0          Bad Hello Int.     : 0
Bad Lengths       : 0          Bad Options         : 0
Bad Dead Int.     : 0          Bad Checksums      : 0
=====

```

Table 314: Output fields: OSPF sham links

Label	Description
If Name	IP interface name
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

21.5 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

7705 SAR Gen 2

21.6 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

7705 SAR Gen 2

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

7705 SAR Gen 2

21.7 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

7705 SAR Gen 2

21.8 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	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

7705 SAR Gen 2

21.9 snmp

snmp

Syntax

snmp

Context

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

Full Context

show snmp

Description

Commands in this context display SNMP configuration.

Platforms

7705 SAR Gen 2

snmp

Syntax

snmp

Context

[\[Tree\]](#) (show>system>security snmp)

Full Context

show system security snmp

Description

Commands in this context show SNMP information.

Platforms

7705 SAR Gen 2

21.10 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

7705 SAR Gen 2

Output

SNMP Trap Group Output

[Table 315: Output fields: SNMP trap group](#) describes SNMP trap group output fields.

Table 315: Output fields: SNMP trap group

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.
Version	Specifies the SNMP version format to use for traps sent to the trap receiver. Valid values are snmpv1, snmpv2c, snmpv3.
Community	The community string required by snmpv1 or snmpv2c trap receivers.

Label	Description
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 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.

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

7705 SAR Gen 2

Output

The following output is an example of SNMP trap group information.

[Table 316: Output fields: SNMP trap group](#) 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 316: Output fields: SNMP trap group

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 snmpv1 , snmpv2c , snmpv3 .
Community	The community string required by snmpv1 or snmpv2c 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 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.

21.11 sntp

sntp

Syntax
sntp

Context
[\[Tree\]](#) (show>system sntp)

Full Context
show system sntp

Description
This command displays SNTP protocol configuration and state.

Platforms
7705 SAR Gen 2

Output
The following output is an example of SNTP information, and [Table 317: Output fields: system SNTP](#) 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 317: Output fields: system SNTP

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.

Label	Description
Interval	The frequency, in seconds, that the server is queried.

21.12 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
7705 SAR Gen 2

21.13 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

7705 SAR Gen 2

Output

The following output is an example of source address output information.

Table 318: Output fields: source address 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 318: Output fields: source address

Label	Description
Application	Displays the source-address application.
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.

21.14 spf

```
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

7705 SAR Gen 2

Output

SPF Output Fields

[Table 319: Output fields: SPF](#) describes SPF output fields.

Table 319: Output fields: SPF

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.
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.

Label	Description
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#
```

21.15 spf-log

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

7705 SAR Gen 2

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
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT

L2 Nodes   : 1
Event Count : 78

When       : 10/01/2011 03:40:26
L1 Nodes   : 1
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT

Duration   : <0.01s
L2 Nodes   : 1
Event Count : 1

When       : 10/01/2011 03:40:25
L1 Nodes   : 1
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT

Duration   : <0.01s
L2 Nodes   : 1
Event Count : 25

When       : 10/01/2011 03:40:27
L1 Nodes   : 1
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT

Duration   : <0.01s
L2 Nodes   : 1
Event Count : 1

When       : 10/01/2011 03:40:27
L1 Nodes   : 0
Trigger LSP: SetupCLI.00-00
SPF Type   : Lfa
Reason     : LSPCONTENT

Duration   : <0.01s
L2 Nodes   : 0
Event Count : 1

When       : 10/01/2011 03:40:25
L1 Nodes   : 1
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT

Duration   : <0.01s
L2 Nodes   : 1
Event Count : 75

When       : 10/01/2011 03:40:27
L1 Nodes   : 1
Trigger LSP: SetupCLI.00-00
SPF Type   : Reg
Reason     : LSPCONTENT
=====
A:SetupCLI#

```

Table 320: Output fields: IS-IS SPF log describes the IS-IS SPF log output fields.

Table 320: Output fields: IS-IS SPF log

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.

Label	Description
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	<p>Displays the reason(s) for the SPF run.</p> <p>NEWADJ: An adjacency changed.</p> <p>NEWLSP: A new LSP was received.</p> <p>NEWAREA: An area changed.</p> <p>NEWREACH: A prefix changed.</p> <p>ECMPCHANGED: An ECMP path changed.</p> <p>NEWMETRIC: A prefix metric changed.</p> <p>RESTART: The graceful restart exited.</p> <p>LSPEXPIRED: An LSP expired.</p> <p>DBCHANGED: The LSP database was cleared by an administrator.</p> <p>LSPCONTENT: The content of an LSP changed.</p> <p>NEWPREF: The external route preference changed.</p> <p>NEWNLPID: The routed protocols (IPv4 or IPv6) changed.</p> <p>MANUALREQ: An SPF calculation was requested by an administrator.</p> <p>ADMINTAGCHANGED: An administrative tag changed.</p> <p>TUNNELCHANGED: An MPLS tunnel changed.</p>

spf-log

Syntax

spf-log

Context

[\[Tree\]](#) (clear>router>isis spf-log)

Full Context

clear router isis spf-log

Description

This command clears the SPF log.

Platforms

7705 SAR Gen 2

21.16 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

7705 SAR Gen 2

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#
```

21.17 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.

Values	<i>ipv4-address: a.b.c.d</i> <i>ipv6-address: 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

7705 SAR Gen 2

21.18 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

7705 SAR Gen 2

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

7705 SAR Gen 2

21.19 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

7705 SAR Gen 2

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
=====
```

21.20 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 TAII 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
7705 SAR Gen 2

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
```

21.21 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

7705 SAR Gen 2

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
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
```

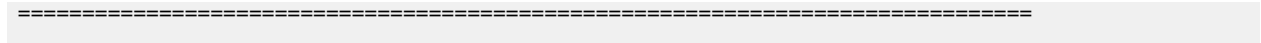


Table 321: Output fields: IS-IS SR adjacency set describes the IS-IS **sr-adj-sets** output fields.

Table 321: Output fields: IS-IS SR adjacency set

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

7705 SAR Gen 2

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 Label Members  Members  Neighbor
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 322: Output fields: OSPF SR adjacency set](#) describes the OSPF **sr-adj-sets** output fields.

Table 322: Output fields: OSPF SR adjacency set

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.

Label	Description
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.

21.22 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

7705 SAR Gen 2

sr-adjacencies

Syntax

sr-adjacencies [*ip-int-name* | *ip-address*] [**detail**]
sr-adjacencies [**remote** *ip-address*] [**detail**]

Context

[Tree] (tools>dump>router>ospf sr-adjacencies)

Full Context

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

7705 SAR Gen 2

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
=====
```

21.23 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: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

7705 SAR Gen 2

Output

The following outputs are examples of IS-IS SR database information, and [Table 323: Output fields: IS-IS SR database](#) 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 GIfId/ 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              MT Id           : 0
Route Level    : 2                    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
-----
1.3.5.5                               N      6      4      17      1      20605  0
-----
SID 606
-----
Label          : 20606                Adv System Id    : 0010.0100.1006
Prefix         : 1.1.1.6              MT Id           : 0
Route Level    : 2                    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 GIfId/ 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 GIfId/ 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
Duplicate Pending      : 0                    Type                 : Local
SR Error               : SR_ERR_OK            Tunnel Active State  : Reported/Ack
-----
SID 614 Algorithm 128
-----
Label                  : 20614                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 GIfId/ 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
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
-----
1.3.5.5                N      6      4      17      1      20615      0

```

Table 323: Output fields: IS-IS SR database

Label	Description
Label	The ILM MPLS label corresponding to the SID
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

7705 SAR Gen 2

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
=====
```

21.24 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

7705 SAR Gen 2

21.25 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

7705 SAR Gen 2

Output

The following output is an example of SR LFA coverage information, and [Table 324: Output fields: IS-IS SR LFA coverage](#) 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 324: Output fields: IS-IS SR LFA coverage describes the IS-IS SR LFA coverage output fields.

Table 324: Output fields: IS-IS SR LFA coverage

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

7705 SAR Gen 2

Output

The following output is an example of OSPF SR LFA coverage, and [Table 325: Output fields: OSPF SR LFA coverage](#) 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 325: Output fields: OSPF SR LFA coverage

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

7705 SAR Gen 2

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 326: Output fields: OSPF3 SR LFA coverage

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.

21.26 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
7705 SAR Gen 2

Output
The following output is an example of SR LFA information, and [Table 327: Output fields: IS-IS SR LFA information](#) 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
Backup-Node                          NodeType  SID      LfaType (Pr-Type)
                                      SID-Type
-----
192.0.2.1/32                         253      0
192.168.13.1
192.168.36.2(L)
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 327: Output fields: IS-IS SR LFA information

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 328: Output fields: IS-IS SR LFA information detail](#) 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 328: Output fields: IS-IS SR LFA information detail

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

21.27 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

21.28 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

7705 SAR Gen 2

21.29 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

7705 SAR Gen 2

21.30 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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

21.31 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*] [**metric-type** *metric-type*] [**delay-metric-limit** *delay-metric-limit*]

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 specific 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 TE metric to optimize the path. By default, the link IGP metric is used.

This parameter is deprecated. When used, it is automatically translated to **metric-type te** and an INFO message is displayed that the parameter is deprecated and **metric-type te** should be used instead.

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.

metric-type *metric-type*

Specifies the metric type.

Values **igp** — Specifies use of the IGP metric.
te — Specifies use of the traffic-engineering metric. This is the default metric type.
delay — Specifies computation delay metrics.

delay-metric-limit *delay-metric-limit*

This parameter is valid for **metric-type delay** only and specifies the upper limit of the delay for a path, in microseconds. If **metric-type delay** and **delay-metric-limit** are specified, this command returns the lowest latency path that satisfies the **delay-metric-limit**. If **metric-type delay** is specified and the **delay-metric-limit** is not, the lowest latency path through the network is returned.

Values 1 to 16777215

Platforms

7705 SAR Gen 2

21.32 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 [/sp-name] [detail] [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}]  
[family family]  
sr-te-lsp [/sp-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 [/sp-name] activepath [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-  
srte}] [family family]  
sr-te-lsp [/sp-name] egress-stats  
sr-te-lsp [/sp-name] path [path-name] [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-  
p2p-srte}] mbb  
sr-te-lsp [/sp-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

7705 SAR Gen 2

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                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 Index     : 65536
From          : 10.20.1.3
Adm State     : Up
LSP Tunnel ID : 1
TTM Tunnel Id : 655362
To            : 10.20.1.6
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
Load Bal Wt      : N/A
Include Grps     :
None
BFD Template     : None
BFD Enable       : False
WaitForUpTimer   : 4
Revert Timer     : Disabled
Entropy Label    : Enabled+
Negotiated EL    : Disabled
VprnAutoBind     : Enabled
IGP Shortcut     : Enabled
IGP LFA          : Disabled
BGPTransTun      : Enabled
Oper Metric      : 1000
PCE Report       : Disabled+
PCE Control      : Disabled
Max SR Labels    : 6
Path Profile     : None
Admin Tags       : None
Primary(a)       : C_F_70000

Metric Type      : igp
Label Stack Reduction: Enabled
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

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 resigned 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 Index     : 65536
From          : 3.3.3.3
To            : 1.1.1.1
Adm State     : Up
LSP Up Time   : 0d 00:00:05
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
ReturnPathLabel : None

LSP Tunnel ID : 1
TTM Tunnel Id : 655362
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 2 sec
Negotiated MTU : 1496

Label Stack Reduction: Disabled
ClassForwarding      : Disabled
Exclude Grps         :
None
BFD Ping Intvl       : N/A
BFD Failure-action    : 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      : OneHopP2PSrTe     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
Load Bal Wt   : N/A
Include Grps  :
None
Egress Stats  : Disabled
BFDD Template : srte              BFD Ping Intvl   : N/A
BFDD 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 329: Output fields: MPLS SR-TE-LSP detail

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
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

Label	Description
	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
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

Label	Description
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
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
Path Name       : path_A2
Path Type       : Secondary
Path Admin      : Up
Path Up Time    : 0d 00:00:00
Retry Limit     : 0
Retry Attempt   : 0

Oper State      : Up

PathCompMethod  : none
MetricType      : igp
LocalSrProt     : preferred
LabelStackRed   : Disabled

OperPathCompMethod: N/A
Oper MetricType : N/A
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   : N/A
Oper HopLimit    : N/A
Oper SetupPriority: N/A
Oper HoldPriority : 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
Degraded         : False
Failure Code     : noError
Failure Node     : n/a
Explicit Hops    :
  No Hops Specified
Actual Hops      :
  No Hops Specified
Srlg             : Disabled

Oper Metric      : N/A
Path Trans       : 0

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
Path Name     : path_A
Path Type     : Primary
Path Admin    : Up
Path Up Time  : 0d 00:01:12
Retry Limit   : 0

Oper State     : Up

Path Oper     : Up
Path Down Time : 0d 00:00:00
Retry Timer   : 30 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	: 2	Oper HopLimit	: 2
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	: None	Oper IncludeGroups	: None
Exclude Groups	: None	Oper ExcludeGroups	: 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
  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   : 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 Up Time   : 0d 00:01:27
Retry Limit    : 10
Retry Attempt  : 0
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
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
Path Trans     : 1
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
Oper Metric     : 16777215

Actual Hops     :
    10.10.11.4(10.20.1.4) (A-SID)
    toHUB.Dut-D.nokia.com
    (Dut-D.nokia.com)
    Record Label : 524279
-> 10.10.6.5(10.20.1.5) (A-SID)
    toD.Dut-E.nokia.com
    (Dut-E.nokia.com)
    Record Label : 524281
-> 10.10.10.6(10.20.1.6) (A-SID)
    toE.Dut-F.nokia.com
    (Dut-F.nokia.com)
    Record Label : 524281

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          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   : 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 Oper     : Up
Path Up Time  : 0d 00:51:10
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 Updt State : None

PCE Report     : Disabled+
Oper PCE Report : Disabled
PCE Control    : Disabled
Oper PCE Control : Disabled

Include Groups :
None
Oper IncludeGroups:
None
Exclude Groups :
None
Oper ExcludeGroups:
None
Last Resignal  : n/a

IGP/TE Metric  : 16777215
Oper Metric    : 16777215
Oper MTU       : 1488
Path Trans     : 1
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
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
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

```

Table 330: 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

Label	Description
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 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

Label	Description
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
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

Label	Description
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
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      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
=====
```

```
*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 331: Output fields: MPLS SR-TE LSP describes the MPLS SR-TE LSP count statistics output fields.

Table 331: Output fields: MPLS SR-TE LSP

Label	Description
LSP Name	The name of the LSP used in the path.
Adm State	Down — The path is administratively disabled.

Label	Description
	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.
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)
-> 10.20.1.3 (10.20.1.3)
-> 10.20.1.6 (10.20.1.6)
Record Label       : 262143
Record Label       : 102003
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

Exclude Grps      :
None

VprnAutoBind      : Enabled
IGP Shortcut       : Enabled
IGP LFA           : Disabled
BGPTransTun       : Enabled
Oper Metric        : 16777215
BGP Shortcut      : Enabled
IGP Rel Metric    : Disabled

```

```
PCE Report      : Inherited                      Max SR Labels : 6
PCE Control     : Disabled
Path Profile:
None

Primary(a)      : 1                               Up Time       : 0d 00:06:09
Bandwidth       : 0 Mbps
=====
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          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          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 Id	Protect Path	Adm	Opr
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 Tunnel ID   : 1
LSP Index      : 65536               TTM Tunnel Id    : 655362
From           : 10.20.1.2          To              : 10.20.1.5
```

```

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
Oper Metric     : 20
PCE Report     : Enabled
PCE Control    : Disabled
Max SR Labels  : 6
Path Profile   :
None
Primary(a)     : fully_loose
Bandwidth      : 0 Mbps
=====

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 10:48:17
=====

```

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
Exclude Groups :
None

IGP/TE Metric : 20
Oper MTU : 1492
Failure Code : noError
Failure Node : n/a
Explicit Hops :
  No Hops Specified
Actual Hops :
  192.168.2.1
-> 192.168.5.5

None
Oper Exclude Groups :
None

Oper Metric : 20
Path Trans : 1

Record Label : 131071
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          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 00:01:07        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    : 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
-> 192.168.5.5
Record Label    : 131071
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 Tunnel ID   : 1
LSP Index      : 65536              TTM Tunnel Id   : 655362
From           : 10.20.1.2          To             : 10.20.1.5
Adm State      : Up                 Oper State      : Up
LSP Up Time    : 0d 00:01:38        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 : pce
FallbkPathComp : none
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       : 20
PCE Report        : Enabled
PCE Control       : Enabled
Max SR Labels     : 6                Additional FRR Labels: 1
Path Profile      :
None
Primary(a)        : fully_loose      Up Time           : 0d 00:01:38
Bandwidth         : 0 Mbps
=====

```

```

*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 To	Tun Id	Protect Path	Adm	Opr
3ffe::a14:106 3ffe::a14:106	1	N/A	Up	Up
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 Index     : 65536
From          : 3ffe::a14:103
To            : 3ffe::a14:106
Adm State     : Up
LSP Up Time   : 0d 00:05:11
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     : 655362
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 00:05:13
Bandwidth           : 0 Mbps
Secondary          : pe1_pe2_Sec
Down Time          : 0d 00:01:23
Bandwidth           : 0 Mbps
Standby            : pe1_pe2_Stby
```

```

Bandwidth      : 0 Mbps
Up Time        : 0d 00:01:09
=====
* 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
A-SID    - Adjacency SID
+        - Inherited
L        - Loose
N-SID    - Node SID
=====
-----
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
MetricType    : igp
Oper PathCompMethod : none
Oper MetricType : igp
LocalSrProt   : preferred
Oper LocalSrProt : preferred
LabelStackRed : Disabled
Oper LabelStackRed : Disabled

Bandwidth     : No Reservation
Hop Limit     : 255
Oper Bandwidth : 0 Mbps
Setup Prio*   : 7
Oper HopLimit : 255
Oper Setup Priority : 7
Hold Priority  : 0
Oper Hold Priority : 0
Inter-area    : N/A

PCE Updt ID   : 0
PCE Upd Fail  : noError
PCE Updt State : None

PCE Report    : Disabled+
Oper PCE Report : Disabled
PCE Control   : Disabled
Oper PCE Control : Disabled

```

```

Include Grou*:
None
Exclude Grou*:
None
Last Resignal: n/a

IGP/TE Metric: 16777215
Oper MTU      : 1492
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
Enable        : False
WaitForUpTim*: 4
WaitForUpTmL*: 0
Start Fail Reason: N/A

Ping Interval      : N/A
State              : notApplicable
OperWaitForUpTimer : 0

-----
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
Path Name     : pe1_pe2_Sec
Path Admin    : Up
Path Up Time  : 0d 00:00:00
Retry Limit   : 0
Retry Attempt : 0

Oper State     : Up
Path Type     : Secondary
Path Oper     : Down
Path Down Time : 0d 00:05:35
Retry Timer    : 30 sec
Next Retry In  : 0 sec

PathCompMeth*: none
MetricType    : igp
LocalSrProt   : preferred
LabelStackRed: Disabled

Oper PathCompMethod : N/A
Oper MetricType     : N/A
Oper LocalSrProt    : N/A
Oper LabelStackRed  : N/A

Bandwidth     : No Reservation
Hop Limit     : 255
Setup Priori*: 7
Hold Priority: 0
Inter-area    : N/A

Oper Bandwidth     : N/A
Oper HopLimit      : N/A
Oper Setup Priority : N/A
Oper Hold Priority  : N/A

PCE Updt ID   : 0
PCE Upd Fail  : noError

PCE Updt State : None

PCE Report    : Disabled+
PCE Control   : Disabled

Oper PCE Report : Disabled
Oper PCE Control : Disabled

Include Grou*:
None
Exclude Grou*:
None
Oper Include Groups :
N/A
Oper Exclude Groups :
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*:
None          Oper Include Groups :
None          None
Exclude Grou*:
None          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
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 00:16:20          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
Exclude Grou*:
None
Last Resignal: n/a

IGP/TE Metric: 16777215
Oper MTU      : 1492
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
Enable        : False
WaitForUpTim*: 4
WaitForUpTmL*: 0
Start Fail Reason: N/A

Ping Interval      : N/A
State              : notApplicable
OperWaitForUpTimer : 0

```

=====

* 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  : 655362

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

```

```

Bandwidth      : 0 Mbps
Up Time        : 0d 00:46:34
=====
* 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 332: Output fields: MPLS SR-TE LSP egress statistics describes the MPLS SR-TE LSP egress statistics output fields.

Table 332: 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

Label	Description
Bit Rate	The bit rate for the LSP (across all paths, for all FCs in/out-of profile) expressed in Mb/s

21.33 sr-te-lsp-egress-stats

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

7705 SAR Gen 2

21.34 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

7705 SAR Gen 2

Output

The following output is an example of SR access list information.

Table 333: Output fields: source access list 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 333: Output fields: source access list

Label	Description
List Name	Displays the name of the src-access-list .
Host Name	Displays the name of the src-host .
Host Address	Displays the IP address of the src-host .
Total Access Lists	Displays the total number of source access lists.

21.35 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
7705 SAR Gen 2

21.36 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
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Output
The following output is an example of SRLG statistics, and [Table 334: Output fields: SRLG](#) 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 334: Output fields: SRLG

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

21.37 ssh

ssh

Syntax

ssh [detail | server-lists | client-lists]

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.

Parameters

detail

Keyword to display detailed information.

server-lists

Keyword to display the lists of cipher, MAC, KEX, and host key algorithms allowed by the SSH server.

client-lists

Keyword to display the lists of cipher, MAC, KEX, and host key algorithms allowed by the SSH client.

Platforms

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Output

The following outputs are examples of SSH information, and [Table 335: Output fields: ssh](#) describes the output fields:

Output example (show system security ssh)

```
=====
SSH Server
=====
Administrative State      : Enabled
Operational State       : Up
Preserve Key             : Disabled
Key-re-exchange          : 60 minutes / 1024 MB

SSH Protocol Version 2   : Enabled
Host Key Fingerprints    :
  RSA                   : MD5:51:02:1d:28:0e:b3:49:f9:71:79:2e:67:a3:25:55:74
                        : SHA256:pY0hLriNg0sXo+Ekh3cl70srLteLLjV/MKCGxbQSuXQ
  ECDSA-SHA2-NISTP256    : MD5:d8:63:f5:9a:01:0f:24:4e:26:06:ab:a4:05:08:fb:52
                        : SHA256:LZ/CHBwn+zCNyLGtTS45UJd8xvjq75hgsnQHvQRvpkU
  ECDSA-SHA2-NISTP521    : MD5:fa:7d:9f:16:a7:e1:17:89:52:0d:d3:bc:0d:c8:1d:ef
                        : SHA256:VWiLx0jcNivVYvJIVc3W2oMNUAT0vML9ckQsnbXF4+I
-----
ConnectionID
Username
RouterInstance
Version      KEX
              Cipher
              MAC
              HostKey
SessionID    ChannelID  ServerName  ChannelStatus
-----
192.168.135.227
admin
management
SSHv2        ecdh-sha2-nistp256
              aes128-ctr
              hmac-sha2-256
              ecdsa-sha2-nistp256
23           0          cli          connected
-----
Number of SSH connections : 1
Number of SSH sessions    : 1
=====
```

Output example (show system security ssh detail)

```
=====
SSH Server Global
=====
Administrative State      : Enabled
Operational State       : Up
Preserve Key             : Disabled
Key-re-exchange          : 60 minutes / 1024 MB

SSH Protocol Version 2   : Enabled
Host Key Fingerprints    :
  RSA                   : MD5:51:02:1d:28:0e:b3:49:f9:71:79:2e:67:a3:25:55:74
```

```

    ECDSA-SHA2-NISTP256 : SHA256:pY0hLrInG0sXo+Ekh3cl70srlteLLjV/MKCGxbQSuXQ
    ECDSA-SHA2-NISTP521 : MD5:d8:63:f5:9a:01:0f:24:4e:26:06:ab:a4:05:08:fb:52
                        : SHA256:LZ/CHBwn+zCNyLGtTS45UJd8xvj75hgsnQHvQRvpkU
                        : MD5:fa:7d:9f:16:a7:e1:17:89:52:0d:d3:bc:0d:c8:1d:ef
                        : SHA256:VWiLx0jcNiVvYvJIVc3W2oMNUAT0vML9ckQsnbXF4+I

=====
SSH Server Router Instance [Base]
=====
Access allowed          : Allowed
-----
Connection
  Username
  Version  KEX
           Cipher
           MAC
           HostKey
  SessionID      ChannelID  ServerName  ChannelStatus
-----
No entries found

=====
SSH Server Router Instance [management]
=====
Access allowed          : Allowed
-----
Connection
  Username
  Version  KEX
           Cipher
           MAC
           HostKey
  SessionID      ChannelID  ServerName  ChannelStatus
-----
192.168.135.227
admin
SSHv2      ecdh-sha2-nistp256
           aes128-ctr
           hmac-sha2-256
           ecdsa-sha2-nistp256
23         0                cli          connected
60 minutes / 1024 MB

Number of SSH connections : 1
Number of SSH sessions    : 1
=====
```

Output example (show system security ssh server-lists)

```

=====
SSH Server configurable algorithm lists
=====
SSHv2 Cipher List      : aes256-ctr
                       : aes192-ctr
                       : aes128-ctr
                       : aes128-cbc
                       : 3des-cbc
                       : aes192-cbc
                       : aes256-cbc
-----
SSHv2 MAC List         : hmac-sha2-512
```

```

                                hmac-sha2-256
                                hmac-sha1
                                hmac-sha1-96
                                hmac-md5
                                hmac-md5-96
-----
SSHv2 KEX List      : ecdh-sha2-nistp521
                      ecdh-sha2-nistp384
                      ecdh-sha2-nistp256
                      diffie-hellman-group16-sha512
                      diffie-hellman-group14-sha256
                      diffie-hellman-group14-sha1
                      diffie-hellman-group-exchange-sha1
                      diffie-hellman-group1-sha1
-----
SSHv2 Host Key List : ecdsa-sha2-nistp521
                      ecdsa-sha2-nistp256
                      rsa-sha2-512
                      rsa-sha2-256
                      ssh-rsa
=====
```

Output example (show system security ssh client-lists)

```
=====
SSH Client configurable algorithm lists
=====
SSHv2 Cipher List   : aes256-ctr
                      aes192-ctr
                      aes128-ctr
                      aes128-cbc
                      3des-cbc
                      aes192-cbc
                      aes256-cbc
-----
SSHv2 MAC List      : hmac-sha2-512
                      hmac-sha2-256
                      hmac-sha1
                      hmac-sha1-96
                      hmac-md5
                      hmac-md5-96
-----
SSHv2 KEX List      : ecdh-sha2-nistp521
                      ecdh-sha2-nistp384
                      ecdh-sha2-nistp256
                      diffie-hellman-group16-sha512
                      diffie-hellman-group14-sha256
                      diffie-hellman-group14-sha1
                      diffie-hellman-group-exchange-sha1
                      diffie-hellman-group1-sha1
-----
SSHv2 Host Key List : ecdsa-sha2-nistp521
                      ecdsa-sha2-nistp384
                      ecdsa-sha2-nistp256
                      rsa-sha2-512
                      rsa-sha2-256
                      ssh-ed25519
                      ssh-rsa
=====
```

Table 335: Output fields: *ssh*

Label	Description
Administrative State	Enabled — The administrative state of the SSH server is enabled Disabled — The administrative state of the SSH server is disabled
Operational State	Up — The operational state of the SSH server is up Down — The operational state of the SSH server is down
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
Host Key Fingerprints	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 connections	The total number of SSH connections
Number of SSH sessions	The total number of active SSH sessions

21.38 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

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Output

The following output is an example of SSM translate information. [Table 336: Output fields: IGMP](#) 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 336: Output fields: IGMP

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

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Output

MLD Interface Output
The following table provides MLD field descriptions.

Table 337: Output fields: MLD

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#
```

21.39 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

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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

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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 338: Output fields: IGMP snooping source groups describes the show output fields.

Table 338: Output fields: IGMP snooping source groups

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

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Output

The following output is an example of IGMP static information. [Table 339: Output fields: IGMP static](#) 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 339: Output fields: IGMP static

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

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Output

The following output is an example of MLD static information. [Table 340: Output fields: MLD static](#) 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
*                                     lax-vls
ff06:db8:1
*                                     lax-vls
ff01:db8:1                            ::4:0
ff01:db8:100:0                        64
3::1                                  lax-vls
ff05:db8:1                            ::1
ff05:db8:20                          32
*                                     lax-vls
ff05:db8:2:1                          ::1
ff05:db8:2:3ff                        1023
3::1                                  lax-vls
ff05:db8:3:0                          ::64
ff05:db8:4:0                          656
3::2                                  lax-vls
ff05:db8:3:0                          ::64
ff05:db8:4:0                          656
4::1                                  flax-vlsoo
ff05:db8:3:0                          ::64
ff05:db8:4:0                          656
5::1                                  lax-vls
ff05:db8:3:0                          ::64
ff05:db8:4:0                          656
-----
Static (*,G)/(S,G) Entries : 9
=====
*A:ALA-BA#
```

Table 340: Output fields: MLD static

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.

Label	Description
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
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

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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
Owner          : static
Endpoint Addr  : 3ffe::a14:102
Preference     : 14
Age            : 426
```

```

Origin ASN      : 0
NumReEval      : 0
NumActPathChange: 0
Maintenance Policy: N/A

Path Segment Lists:
Segment-List    : 1
S-BFD State     : Down
Num Segments    : 1
  Seg 1 SID     : 2222:2:2:2:0:a::

Origin          : 0.0.0.0
ReEvalReason    : none
Last Change     : 06/13/2022 17:40:54

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.

```

21.40 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

7705 SAR Gen 2

Output

Static ARP Table Output — The following output is an example of static AARP table information, and [Table 341: Output fields: static ARP](#) 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 341: Output fields: static ARP

Label	Description
IP Address	The IP address of the static ARP entry
MAC Address	The MAC address of the static ARP entry

Label	Description
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
No. of ARP Entries	The number of ARP entries displayed in the list

21.41 static-lsp

static-lsp

Syntax

static-lsp [/sp-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

7705 SAR Gen 2

Output

The following output is an example of MPLS static LSP information.

[Table 342: Output fields: MPLS static LSP](#) describes the MPLS static LSP output fields.

Table 342: Output fields: MPLS static LSP

Label	Description
Lsp Name	The name of the LSP used in the path up to 64 characters in length.

Label	Description
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#
```

21.42 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

7705 SAR Gen 2

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
Head End Addr  : 0.0.0.0
Preference     : 14
RD             : 5
SRv6 BSID 1    : N/A
Locator        : C1
Function        : End.B6.Encaps.Red
Function Stat* : error
Color          : 10
Endpoint Addr  : 3ffe::a14:102

Segment Lists Configuration:
Segment-List    : 1
Admin Status    : Up
Segment Stack:
  SRv6 SID 1: 2222:2:2:2:0:a::

Weight          : 1
Last Change     : 06/13/2022 17:40:54

=====
* 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
Head End Addr  : 0.0.0.0
Preference     : 14
RD             : 5
SRv6 BSID 1    : N/A
Locator        : C1
Function        : End.B6.Encaps.Red
Function Stat* : error
Color          : 10
Endpoint Addr  : 3ffe::a14:102

Path Entry:
Active         : Yes
TunnelId       : 917510
Origin ASN     : 0
NumReEval      : 0
NumActPathChange: 0
Maintenance Policy: N/A
Owner          : static
Age           : 346
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.
```

21.43 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	
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:x:d.d.d.d
x:	[0 to FFFF]H
d:	[0 to 255]D
ipv6-prefix-length:	0 to 128

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

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

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

7705 SAR Gen 2

Output

Static Route Output — The following output is an example of static route information, and [Table 343: Output fields: static route](#) 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
Active           : Y
Prefix List      : n/a
Prefix List Type : n/a
Metric           : 1
Preference       : 5
Source Class     : 0
Dest Class       : 0
Admin State      : Up
Tag              : 0
Creation Origin  : manual
BFD              : disabled
Community        :
CPE-check        : disabled
Tunnel Resolution: any
Disallow-IGP     : disabled
RSVP-TE Tunnels  : disabled
LDP Tunnels      : disabled
SR-ISIS Tunnels  : disabled
SR-OSPF Tunnels  : disabled
=====
Prefix           : 3ffe::10:10:14:0/120
Nexthop          : 3ffe::20:20:1:6
Type             : Indirect
Interface        : n/a
Active           : Y
Prefix List      : n/a
Prefix List Type : n/a
Metric           : 1
Preference       : 5
Source Class     : 0
Dest Class       : 0
Admin State      : Up
Tag              : 0
Creation Origin  : manual
BFD              : disabled
Community        :
CPE-check        : disabled
Tunnel Resolution: any
Disallow-IGP     : disabled
RSVP-TE Tunnels  : disabled
LDP Tunnels      : disabled
=====
```

```

SR-ISIS Tunnels : disabled
SR-TE Tunnels   : disabled
-----
Prefix           : 3ffe::10:10:14:0/120
Nexthop          : 3ffe::20:20:1:5
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
-----
Prefix           : 3ffe::10:10:14:0/120
Nexthop          : 3ffe::10:20:1:5
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
Type              : Nexthop
Backup Nexthop    : 2.23.1.1
Validate Nexthop  : No
Backup Status     : Active
                  : Backup
Interface         : Dut-C-Dut-A-1
Prefix List       : n/a
Metric           : 1
Source Class      : 0
Admin State       : Up
Creation Origin   : manual
BFD               : disabled
Nexthop Community:
CPE-check         : disabled
LDP Sync          : disabled
-----

```

```
No. of Static Routes: 1
```

```
=====
A:Router#
```

Table 343: Output fields: static route

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 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

7705 SAR Gen 2

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

```
=====
```

21.44 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.

Values32 chars max
- spi

Specifies the spi.

Values256..16383

Platforms

7705 SAR Gen 2

21.45 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

7705 SAR Gen 2

Output

The following command displays DHCP statistics information, and [Table 344: Output fields: DHCP statistics](#) 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 344: Output fields: DHCP statistics

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

Label	Description
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
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 routed-subnet-transparent-forwarding command must be configured in the routing instance.

Label	Description
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 routed-subnet-transparent-forwarding command must be configured in the routing instance.
Other Opcode Packets	<div>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 routed-subnet-transparent-forwarding command must be configured in the routing instance.</div> <div> Note: 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.</div>

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

7705 SAR Gen 2

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 345: Output fields: DHCP6 statistics](#) describes DHCP6 output statistics.

Table 345: Output fields: DHCP6 statistics

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

Field	Description
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

7705 SAR Gen 2

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 346: Output fields: DHCP statistics interface describes DHCP statistics output fields.

Table 346: Output fields: DHCP statistics interface

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

Field	Description
DHCP FORCERENEWs Spoofed	The number of spoofed FORCERENEW messages

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

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (clear>router>dhcp6 statistics)

Full Context

clear router dhcp6 statistics

Description

This command clears DHCP6 statistics.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (clear>service statistics)

Full Context

clear service statistics

Description

This command clears the statistics for a service.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of MLD snooping statistics information.

Output Example

```
*A:rbac_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:rbac_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).

vni

The VXLAN Network Identifier (VNI) for which to display information.

Values 1 to 16777215

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of IGMP statistics information. [Table 347: Output fields: IGMP statistics](#) 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 347: Output fields: IGMP statistics

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.
	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.

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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).

vni-id

Displays information for the specified VXLAN Network Identifier (VNI).

Values 1 to 16777215

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (show>router>vrrp statistics)

Full Context

show router vrrp statistics

Description

This command displays statistics for VRRP instance.

Platforms

7705 SAR Gen 2

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 348: Output fields: VRRP statistics

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
7705 SAR Gen 2

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
7705 SAR Gen 2

Output
The following output is an example of RIP statistics information, and [Table 349: Output fields: RIP statistics](#) 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 349: Output fields: RIP statistics

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.

Label	Description
	<p>Last 5 Min — The number of triggered updates that were sent in the last 5 minutes.</p> <p>Last 1 Min — The number of triggered updates that were sent in the last 1 minute.</p>
Bad Packets Received	<p>Total — The total number of RIP updates received on this interface that were discarded as invalid.</p> <p>Last 5 Min — The number of RIP updates received on this interface that were discarded as invalid in the last 5 minutes.</p> <p>Last 1 Min — The number of RIP updates received on this interface that were discarded as invalid in the last 1 minute.</p>
RIPv1 Updates Received	<p>Total — The total number of RIPv1 updates received.</p> <p>Last 5 Min — The number of RIPv1 updates received in the last 5 minutes.</p> <p>Last 1 Min — The number of RIPv1 updates received in the last 1 minute.</p>
RIPv1 Updates Ignored	<p>Total — The total number of RIPv1 updates ignored.</p> <p>Last 5 Min — The number of RIPv1 updates ignored in the last 5 minutes.</p> <p>Last 1 Min — The number of RIPv1 updates ignored in the last 1 minute.</p>
RIPv1 Bad Routes	<p>Total — The total number of bad routes received from the peer.</p> <p>Last 5 Min — The number of bad routes received from the peer in the last 5 minutes.</p> <p>Last 1 Min — The number of bad routes received from the peer in the last minute.</p>
RIPv1 Requests Received	<p>Total — The total number of times the router received RIPv1 route requests from other routers.</p> <p>Last 5 Min — The number of times the router received RIPv1 route requests from other routers in the last 5 minutes.</p> <p>Last 1 Min — The number of times the router received RIPv1 route requests from other routers in the last 1 minute.</p>
RIPv1 Requests Ignored	<p>Total — The total number of times the router ignored RIPv1 route requests from other routers.</p> <p>Last 5 Min — The number of times the router ignored RIPv1 route requests from other routers in the last 5 minutes.</p> <p>Last 1 Min — The number of times the router ignored RIPv1 route requests from other routers in the last 1 minute.</p>
RIPv2 Updates Received	<p>Total — The total number of RIPv2 updates received.</p> <p>Last 5 Min — The number of RIPv2 updates received in the last 5 minutes.</p> <p>Last 1 Min — The number of RIPv2 updates received in the last minute.</p>

Label	Description
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.
RIPv2 Requests Received	Total — The total number of times the router received RIPv2 route requests from other routers. Last 5 Min — The number of times the router received RIPv2 route requests from other routers in the last 5 minutes. Last 1 Min — The number of times the router received RIPv2 route requests from other routers in the last minute.
RIPv2 Requests Ignored	Total — The total number of times the router ignored RIPv2 route requests from other routers. Last 5 Min — The number of times the router ignored RIPv2 route requests from other routers in the last 5 minutes. Last 1 Min — The number of times the router ignored RIPv2 route requests from other routers in the last minute.
Authentication Errors	Total — The total number of authentication errors to secure table updates. Last 5 Min — The number of authentication errors to secure table updates in the last 5 minutes. Last 1 Min — The number of authentication errors to secure table updates in the last minute.

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
IPv4P2MPFec0LSessSn : 0                IPv4P2MPFec0LSessRecv : 0
IPv6P2MPFec0LSessSn : 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 0LSessSn: 0                Svc Fec128 0LSessRecv: 0
Svc Fec129 0LSessSn: 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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of RSVP statistics information.

[Table 350: Output fields: RSVP statistics](#) describes RSVP statistics output fields.

Table 350: Output fields: RSVP statistics

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

7705 SAR Gen 2

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

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (show>isa statistics)

Full Context

show isa statistics

Description

Commands in this context display ISA statistical information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of MLD statistics information. [Table 351: Output fields: MLD statistics](#) 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 351: Output fields: MLD statistics

Label	Description
MLD Interface Statistics	The MLD statistics for a particular interface.
Message Type	Queries — The number of MLD general queries transmitted or received on this interface. Report — The total number of MLD V1 or V2 reports transmitted or received on this interface. Dones — The total number of MLD dones transmitted on this interface.
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.

Label	Description
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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of PIM statistics information. [Table 352: Output fields: PIM statistics](#) 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 352: Output fields: PIM statistics

Label	Description
PIM Statistics	The section listing the PIM statistics for a particular interface
Message Type	<p>The type of message.</p> <p>Hello — The number of PIM hello messages received or transmitted</p> <p>Join Prune — The number of PIM join prune messages received or transmitted</p> <p>Asserts — The number of PIM assert messages received or transmitted</p>

Label	Description
	<p>Register — The number of register messages received or transmitted</p> <p>Null Register — The number of PIM null register messages received or transmitted</p> <p>Register Stop — The number of PIM register stop messages received or transmitted</p> <p>BSM — The number of PIM Bootstrap messages (BSM) received or transmitted</p> <p>Candidate RP Adv — The number of candidate RP advertisements</p> <p>Auto-RP Announce — The number of auto-RP announce (224.0.1.39) messages received or transmitted</p> <p>Auto-RP Mapping — The number of auto-RP mapping (224.0.1.40) messages received or transmitted</p>
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

Label	Description
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
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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

Authentication Statistics Output — The following output is an example of authentication statistics, and [Table 353: Output fields: authentication statistics](#) 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 353: Output fields: authentication statistics

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (clear>system statistics)

Full Context

clear system statistics

Description

This command clears system specific statistics.

Platforms

7705 SAR Gen 2

statistics

Syntax

statistics

Context

[\[Tree\]](#) (show>certificate statistics)

Full Context

show certificate statistics

Description

This command shows certificate related statistics.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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 354: Output fields: IS-IS statistics](#) describes IS-IS statistics output fields.

Table 354: Output fields: IS-IS statistics

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.
Retransmitted	The count of link state PDUs that had to be retransmitted by this instance of the protocol.

statistics

Syntax

statistics

Context

[\[Tree\]](#) (clear>router>isis statistics)

Full Context

clear router isis statistics

Description

This command clears and resets IS-IS statistics.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of global OSPF statistic information and [Table 355: Output fields: OSPF statistics](#) 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 Addrs  : 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 355: Output fields: OSPF statistics

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

Label	Description
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.
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.

Label	Description
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.
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>ospf3 statistics)

[\[Tree\]](#) (clear>router>ospf statistics)

Full Context

clear router ospf3 statistics

clear router ospf statistics

Description

This command clears all neighbor, router, interface, SPF and global statistics of this OSPF instance.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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 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

7705 SAR Gen 2

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

7705 SAR Gen 2

22 s Commands – Part III

22.1 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

7705 SAR Gen 2

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#
```

22.2 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

7705 SAR Gen 2

stats

Syntax

stats

Context

[\[Tree\]](#) (clear>ipsec stats)

Full Context

clear ipsec stats

Description

Commands in this context clear IKE statistics.

Platforms

7705 SAR Gen 2

22.3 status

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
7705 SAR Gen 2

Output
The following output is an example of IGMP status information. [Table 356: Output fields: IGMP status](#) 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 356: Output fields: IGMP status

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>router>ldp status)

Full Context

show router ldp status

Description

This command displays LDP status information.

Platforms

7705 SAR Gen 2

Output

LDP Status Output

Table 357: Output fields: LDP status 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          IPv6 Oper State      : Down
IPv4 Down Time : 2d 03:47:02    IPv6 Down Time    : 2d 03:47:02
IPv4 Oper Down Rea*: systemIpDown  IPv6 Oper Down Reason: systemIpDown
IPv4 Oper Down Eve*: 0          IPv6 Oper Down Events: 0
Tunn Down Damp Time: 3 sec      Weighted ECMP     : Disabled
Tunnel Table Pref : 9
Label Withdraw Del*: 0 sec      Implicit Null Label : Disabled
Short. TTL Local  : Enabled      Short. TTL Transit  : Enabled
ConsiderSysIPInGep : Disabled
Imp Ucast Policies : None        Exp Ucast Policies  : None
Imp Mcast Policies : None        Tunl Imp Policies   : None
Tunl Exp Policies  : None        Mcast Upstream FRR : Disabled
FRR                : Disabled    ASBR MoFRR Loop Detct: Disabled
Mcast Upst ASBR FRR: Disabled
MP MBB Time       : 3
Aggregate Prefix   : False       Agg Prefix Policies : None
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
-----
Capabilities
-----
Dynamic          : Enabled        P2MP              : Enabled
IPv4 Prefix Fec  : Enabled        IPv6 Prefix Fec   : Enabled
Service Fec128   : Enabled        Service Fec129    : Enabled
MP MBB           : Enabled        Overload          : Enabled
Unrecognized Notif*: Enabled
=====

```

Table 357: Output fields: LDP status

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.
Oper Down Events	The number of times the LDP instance has gone operationally down since the instance was created.

Label	Description
Tunn Down Damp Time	Indicates the value configured by tunnel-down-damp-time .
Weighted ECMP	Indicates whether weighted ecmp is enabled or not.
Label Withdraw Del*	Indicates the value configured by label-withdrawal-delay .
Implicit Null Label	Indicates whether implicit null is supported.
Short. TTL Local	Indicates whether shortcut-local-ttl-propagate is enabled or not.
Short. TTL Transit	Indicates whether shortcut-transit-ttl-propagate is enabled or not.
ConsiderSysIPByPol*	Whether consider-system-ip-in-gep 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 mp-mbb-time .
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.
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	

Label	Description
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

7705 SAR Gen 2

Output

The following output is an example of MPLS status information.

[Table 358: Output fields: MPLS status](#) 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 358: Output fields: MPLS status

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>rsvp status)

Full Context

show router rsvp status

Description

This command displays RSVP status.

Platforms

7705 SAR Gen 2

Output

The following output is an example of RSVP status information.

[Table 359: Output fields: RSVP status](#) describes RSVP status output fields.

Table 359: Output fields: RSVP status

Label	Description
Admin Status	Down — RSVP is administratively disabled. Up — RSVP is administratively enabled.
Oper Status	Down — RSVP is operationally down.

Label	Description
	Up — RSVP is operationally up.
Keep Multiplier	Displays the keep-multiplier number used by RSVP to declare that a reservation is down or the neighbor is down.
Refresh Time	Displays the refresh-time interval (in s), between the successive Path and Resv refresh messages.
Message Pacing	Enabled — RSVP messages, specified in the max-burst command, are sent in a configured interval, specified in the period 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 rsvp max-burst command.
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
Rapid Retransmit      : 5 hmsec
Graceful Shutdown     : Disabled
Implicit Null Label   : Disabled
P2P Merge Point Ab*   : 10
DiffServTE AdmModel   : Basic
Percent Link Bw CT0   : 100
Percent Link Bw CT1   : 0
Percent Link Bw CT2   : 0
Percent Link Bw CT3   : 0
TE0 -> Class Type     : 0
TE1 -> Class Type     : 0
TE2 -> Class Type     : 0
TE3 -> Class Type     : 0
TE4 -> Class Type     : 0
TE5 -> Class Type     : 0
TE6 -> Class Type     : 0
TE7 -> Class Type     : 0
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 Sample Intv       : 30
DBw Up Threshold      : 0 %
DBw Down Threshold    : 0 %
Refresh Bypass        : Disabled
Rapid Retry Limit     : 3
SoftPreemptionTimer   : 300 sec
Node-id in RR0        : Exclude
P2MP Merge Point A*   : 10
Percent Link Bw CT4   : 0
Percent Link Bw CT5   : 0
Percent Link Bw CT6   : 0
Percent Link Bw CT7   : 0
Priority               : 0
Priority               : 1
Priority               : 2
Priority               : 3
Priority               : 4
Priority               : 5
Priority               : 6
Priority               : 7
=====
* 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

7705 SAR Gen 2

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
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Output
[Table 360: Output fields: MPLS forward policy status](#) describes MPLS forward-policy status output fields.
Table 360: Output fields: MPLS forward policy status

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>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
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Output
The following output is an example of MLD status information [Table 361: Output fields: MLD status](#) 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 361: Output fields: MLD status

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.
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 [**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

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Output

The following output is an example of a PIM status configuration. [Table 362: Output fields: PIM status](#) 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 362: Output fields: PIM status

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.
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.

Label	Description
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 status)

Full Context

show router status

Description

This command displays the router status.

Platforms

7705 SAR Gen 2

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           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                               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
BIER                             Not configured          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          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                 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          Up
OSPFv2           Not config Not config
RIP              Not config Not config
RIP-NG           Not config Not config
ISIS             Not config Not config
MPLS             Not config Not config
RSVP             Not config Not config
```

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	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	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	Disabled	
Mtrace2 Tests	Enabled on UDP PORT 5001	

Router Status Output—The following output is an example of router status information:

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	
VRPN Local TTL Propagate	vc-only	
VRPN 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#		

VRPN TTL Propagation and ICMP Tunneling—The following output is an example of TTL propagation and ICMP tunneling configurations in a VRPN service. The TTL propagation has been specified as local and all for VRPN 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>isis status)

Full Context

show router isis status

Description

This command displays the IS-IS status information.

Platforms

7705 SAR Gen 2

Output

The following output is an example of the IS-IS status that shows Unreachable Prefix Announcement (UPA) configuration properties, and [Table 363: 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 363: 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 363: 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                         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

Level          : 1                         Adjacencies      : 0
Desg. IS       : Dut-C
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

Level          : 2                         Adjacencies      : 0
Desg. IS       : Dut-C
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
=====
```

The following output is an example of the output with flexible algorithms enabled, and [Table 363: 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 363: 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
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"> Up — IS-IS is administratively up Down — IS-IS is administratively down
Ipv4 Routing	Displays one of the following: <ul style="list-style-type: none"> Enabled — IPv4 routing is enabled Disabled — IPv4 routing is disabled
Ipv6 Routing	Displays one of the following: <ul style="list-style-type: none"> Disabled — IPv6 routing is disabled Enabled, Native — IPv6 routing is enabled Enabled, Multi-topology — Multi-topology TLVs for IPv6 routing is enabled
Mcast Ipv4 Routing	Displays one of the following:

Label	Description
	<ul style="list-style-type: none"> Enabled — Multicast is enabled Disabled — Multicast is disabled Native — Multicast in IS-IS MT0 is enabled Multi-topology — Multicast in IS-IS MT3 (IPv4) is enabled
Mcast Ipv6 Routing	Displays one of the following: <ul style="list-style-type: none"> Enabled — Multicast is enabled Disabled — Multicast is disabled Native — Multicast in IS-IS MT0 is enabled Multi-topology — Multicast in IS-IS MT4 (IPv6) is enabled
Last Enabled	Displays the date and time when IS-IS was last enabled in the router
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"> True — All IS-IS mismatched protocol packets are rejected False — Authentication is performed on received IS-IS protocol packets but mismatched packets are not rejected
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"> Enabled — Complete Sequence Number Packet (CSNP) authentication is enabled Disabled — CSNP authentication is disabled
HELLO-Authentication	Displays one of the following: <ul style="list-style-type: none"> Enabled — Hello packet authentication is enabled Disabled — Hello packet authentication is disabled
PSNP-Authentication	Displays one of the following: <ul style="list-style-type: none"> Enabled — Partial Sequence Number Packet (PSNP) authentication is enabled Disabled — PSNP authentication is disabled
Traffic Engineering	Displays one of the following: <ul style="list-style-type: none"> Enabled — TE is enabled for the router

Label	Description
	<ul style="list-style-type: none"> Disabled — TE is disabled so that TE metrics are not generated and are ignored when received by this node
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 configure router ipv6-te-router-id interface name command. By default, the system IPv6 address is used when IPv6 TE is enabled.
Graceful Restart	<p>Displays one of the following:</p> <ul style="list-style-type: none"> Enabled — Graceful restart is enabled for this instance of IS-IS on the router Disabled — Graceful restart capability is disabled for this instance of IS-IS on the router
GR Helper Mode	Displays if GR helper mode is configured
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	<p>Displays if overload notification only is configured:</p> <ul style="list-style-type: none"> Disabled — Indicates the router will go into overload mode when the overload condition is reached. Enabled — Indicates the router will not go into overload mode when the overload condition is reached and instead will only advertise a notification.
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

Label	Description
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
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"> Enabled — Complete Sequence Number Packet (CNSP) authentication is enabled Disabled — CNSP authentication is disabled
L1 HELLO-Authentication or L2 HELLO-Authentication	Displays one of the following: <ul style="list-style-type: none"> Enabled — Hello packet authentication is enabled Disabled — Hello packet authentication is disabled
L1 PSNP-Authentication or L2 PSNP-Authentication	Displays one of the following: <ul style="list-style-type: none"> Enabled — Partial Sequence Number Packet (PSNP) authentication is enabled Disabled — PSNP authentication is disabled
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

Label	Description
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
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

Label	Description
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
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 if 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

Label	Description
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
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

Label	Description
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>ospf3 status)

[\[Tree\]](#) (show>router>ospf status)

Full Context

show router ospf3 status

show router ospf status

Description

Displays the general status of OSPF.

Platforms

7705 SAR Gen 2

Output

OSPF Status Output Fields

[Table 364: Output fields: OSPF status](#) describes the command output fields for OSPF status.

Table 364: Output fields: OSPF status

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

Label	Description
	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.
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
=====

```

22.4 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

7705 SAR Gen 2

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
=====
```

22.5 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

7705 SAR Gen 2

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 365: Output fields: sticky leases describes the sticky leases field descriptions.

Table 365: Output fields: sticky leases

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

7705 SAR Gen 2

22.6 stop

```
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
7705 SAR Gen 2

22.7 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
7705 SAR Gen 2

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   BDPDU 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#

```

Table 366: Output fields: service ID STP describes show service-id STP output fields:

Table 366: Output fields: service ID STP

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
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.

Label	Description
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
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>id stp)

[\[Tree\]](#) (clear>service>statistics>id stp)

Full Context

clear service id stp

clear service statistics id stp

Description

Clears all spanning tree statistics for the service ID.

Platforms

7705 SAR Gen 2

22.8 streaming

streaming

Syntax

streaming

Context

[\[Tree\]](#) (show>snmp streaming)

Full Context

show snmp streaming

Description

Commands in this context display streaming counters information.

Platforms

7705 SAR Gen 2

22.9 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

7705 SAR Gen 2

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 367: Output fields: extended subnet statistics](#) describes extended subnet statistics output field descriptions.

Table 367: Output fields: extended subnet statistics

Field	Descriptions
Current	The current statistics for the subnet
Peak	The peak statistics for the subnet
TimeStamp	The timestamp for the last reset
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

7705 SAR Gen 2

22.10 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
7705 SAR Gen 2

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 368: Output fields: subnet statistics pool describe the fields for subnet stats pool output.

Table 368: Output fields: subnet statistics pool

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 offered
Stable	The number of leases in this subnet that are in state stable
FRPending	The number of leases in this subnet that are in state force RenewPending
RemPending	The number of leases in this subnet that are in state removePending
Declined	The number of addresses in this subnet that are declined
No. of entries	The total number of entries

22.11 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

7705 SAR Gen 2

22.12 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of QoS scheduler hierarchy subscriber information, and [Table 369: Output fields: QoS scheduler hierarchy subscriber](#) 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
| | | AvgFrm0v: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 369: Output fields: QoS scheduler hierarchy subscriber

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

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Output

The following output is an example of QoS scheduler-stats subscriber information, and [Table 370: Output fields: QoS scheduler statistics subscriber](#) 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 370: Output fields: QoS scheduler statistics subscriber

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

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Output

The following output is an example of H-QoS aggregate rate limit per subscriber, and [Table 371: Output fields: H-QoS aggregate rate limit per subscriber](#) 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 371: Output fields: H-QoS aggregate rate limit per subscriber

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the limit-unused-bandwidth 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* [**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

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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

7705 SAR Gen 2

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

7705 SAR Gen 2

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.

name

Specifies the arbiter name, up to 32 characters.

root

Specifies the arbiter root, up to 32 characters.

Platforms

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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.
- 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
	<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

Platforms

7705 SAR Gen 2

22.13 subscriber-mgmt

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

7705 SAR Gen 2

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

7705 SAR Gen 2

22.14 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

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Output

The following output is an example of the telemetry gRPC subscription information, and [Table 372: Output fields: telemetry gRPC subscription](#) 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 372: Output fields: telemetry gRPC subscription

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

Label	Description
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

7705 SAR Gen 2

Output

The following output is an example of persistent subscription fields and [Table 373: Output fields: persistent subscription](#) 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 373: Output fields: persistent subscription

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 delay-on-boot 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.

Label	Description
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.
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.

Label	Description
No. of paths	Displays the total number of configured paths.

22.15 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
7705 SAR Gen 2

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 374: Output fields: `tools dump log subscriptions` describes the output fields.

Table 374: Output fields: `tools dump log subscriptions`

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
7705 SAR Gen 2

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 375: Output fields: tools dump log subscriptions describes subscriptions output fields.

Table 375: Output fields: tools dump log subscriptions

Label	Description
No. of subscriptions	Specifies the number of active subscriptions.

22.16 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

7705 SAR Gen 2

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      N/A      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>dhcp summary)
- [Tree] (show>router>dhcp6 summary)

Full Context

- show router dhcp summary
- show router dhcp6 summary

Description

This command displays the status of the DHCP6 relay and DHCP snooping functions on each interface.

Platforms

7705 SAR Gen 2

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 376: Output fields: DHCP summary describes DHCP summary output field descriptions.

Table 376: Output fields: DHCP summary

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 377: Output fields: DHCP6 summary describes DHCP6 summary output fields.

Table 377: Output fields: DHCP6 summary

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

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Output

The following output is an example of DHCP summary information, and [Table 378: Output fields: service ID DHCP summary](#) 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 378: Output fields: service ID DHCP summary

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 [**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

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Output

The following output is an example of BGP summary information, and [Table 379: Output fields: BGP summary](#) 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 Suppressed 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 379: Output fields: BGP summary

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

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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

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Output

The following output is an example of MPLS label summary information.

Table 380: Output fields: MPLS label summary 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 380: Output fields: MPLS label summary

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>router>nat summary)

Full Context

show router nat summary

Description

This command displays the NAT information summary.

Platforms

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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

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Output

The following output is an example of NGE summary information, and [Table 381: Output fields: group encryption summary](#) 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 381: Output fields: group encryption summary

Label	Description
Group Encryption	
Encryption Label	The unique network-wide group encryption label
Encryption Keygroup	
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

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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 [*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: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	aps-group-id [.channel]	
	aps	keyword
	<i>group-id</i>	1 to 128
eth-sat-id	esat-id [/slot/[u]port]	
	esat	keyword
	<i>id</i>	1 to 20
	<i>u</i>	keyword for up-link port
tdm-sat-id	tsat-id [/slot/[u]port.channel]	
	tsat	keyword
	<i>id</i>	1 to 20
	u	keyword for up-link port
pxc-id	pxc-id.sub-port	

pxc	keyword
<i>id</i>	1 to 64
<i>sub-port</i>	a to b

tunnel-id
Specifies the tunnel ID.
Values 0 to 4294967295

Platforms
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22.17 summary-address

summary-address

Syntax
summary-address [*ip-address* [*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
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Output
The following output is an example of summary address information and [Table 382: 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 382: 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 382: 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
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.

22.18 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

7705 SAR Gen 2

22.19 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

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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 383: Output fields: redundancy multi-chassis sync](#) 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 383: Output fields: redundancy multi-chassis sync

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 384: Output fields: redundancy multi-chassis sync peer](#) 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 384: Output fields: redundancy multi-chassis sync peer

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.

Label	Description
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 385: Output fields: redundancy multi-chassis sync peer detail](#) 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 385: Output fields: redundancy multi-chassis sync peer detail

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.

Label	Description
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.

22.20 sync-database

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.

Values	port-id, lag-id	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	port-id, lag-id	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

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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-pppoe - 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	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

Platforms

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22.21 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

7705 SAR Gen 2

22.22 synchronization

synchronization

Syntax

synchronization

Context

[\[Tree\]](#) (show>redundancy synchronization)

Full Context

show redundancy synchronization

Description

This command displays redundancy synchronization times.

Platforms

7705 SAR Gen 2

Output

The following output is an example of redundancy synchronization information, and [Table 386: Output fields: synchronization](#) 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 386: Output fields: synchronization

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.

22.23 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

7705 SAR Gen 2

Output

The following output is an example of syslog information, and [Table 387: Output fields: log syslog](#) 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 387: Output fields: log syslog

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 388: Output fields: log syslog ID](#) 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 388: Output fields: log syslog ID

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"> standard – the standard HH:MM:SS format is being used millisecond – a format of HH:MM:SS.sss is being used. The 3 additional fractional second digits provide millisecond granularity.

22.24 system

system

Syntax system

Context

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

Full Context

show system

Description

Commands in this context display system information.

Platforms

7705 SAR Gen 2

system

Syntax

system

Context

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

Full Context

tools perform system

Description

This command is a tool for controlling the system.

Platforms

7705 SAR Gen 2

system

Syntax

system

Context

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

Full Context

show service system

Description

Commands in this context display service system information.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

system

Syntax

system

Context

[Tree] (tools>dump system)

Full Context

tools dump system

Description

Commands in this context dump tools for system.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

22.25 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

7705 SAR Gen 2

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
=====
```

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

7705 SAR Gen 2

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 SAI-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

7705 SAR Gen 2

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 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: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

7705 SAR Gen 2

Output

The following outputs are examples of LDP targeted peer information, and [Table 389: Output fields: LDP targeted peer](#) 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 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
BFD Status      : Disabled
-----
No. of IPv4 Targeted Peers: 1
=====

```

The following table describes the LDP targeted peer output fields.

Table 389: Output fields: LDP targeted peer

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.

23.4 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

7705 SAR Gen 2

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
-----
```

23.5 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

7705 SAR Gen 2

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
=====
```

23.6 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

7705 SAR Gen 2

23.7 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 - [0 to FFFF]H d
- [0 to 255]D

Platforms

7705 SAR Gen 2

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

```

23.8 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

7705 SAR Gen 2

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
=====
```

23.9 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

7705 SAR Gen 2

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

```

23.10 telemetry

telemetry

Syntax

telemetry

Context

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

Full Context

show system telemetry

Description

Commands in this context display telemetry information.

Platforms

7705 SAR Gen 2

telemetry

Syntax

telemetry

Context

[\[Tree\]](#) (tools>dump>system telemetry)

Full Context

tools dump system telemetry

Description

Commands in this context dump telemetry information.

Platforms

7705 SAR Gen 2

23.11 template

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

7705 SAR Gen 2

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

7705 SAR Gen 2

23.12 test-event

```
test-event
```

Syntax

```
test-event [custom-text custom-text]
```

Context

[\[Tree\]](#) (tools>perform>log test-event)

Full Context

```
tools perform log test-event
```

Description

This command generates a test log event.

Parameters

custom-text

Specifies custom text, up to 800 characters. Embedded double quotes are not supported in the *custom-text* string. There is no special treatment for \n or \r sequences. For example, \n in the *custom-text* string is output as the backslash character (\) and "n" (the equivalent of ASCII 0x5C and 0x6e).

Platforms

7705 SAR Gen 2

23.13 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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

7705 SAR Gen 2

23.14 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

7705 SAR Gen 2

Output

The following output is an example of OAM-PM test type and test ID information. [Table 390: Output fields: OAM-PM tests](#) 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-epipel
DMM        3        Up     Up    no   proactive    eth-circuit-service-epipel-2
DMM        4        Up     Up    no   proactive    eth-circuit-service-vpls3
DMM       222     Up     Up    no   proactive    eth-circuit-service-epipel-3
LMM        2        Up     Up    no   proactive    eth-circuit-service-epipel
SLM        2        Up     Up    no   proactive    eth-circuit-service-epipel
SLM        3        Up     Up    no   proactive    eth-circuit-service-epipel-2
SLM        4        Up     Up    no   proactive    eth-circuit-service-vpls3
SLM       222     Up     Up    no   proactive    eth-circuit-service-epipel-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 390: Output fields: OAM-PM tests

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 (auto) 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

Label	Description
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 session-type on-demand and has not been enabled using the global CLI oam oam-pm session start command
TxE	no – There has been no error detected yes – The has been an error detected
Sess Type	The session type, proactive and on-demand
Session	The name of the session, up to 32 characters

23.15 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
7705 SAR Gen 2

Output
The following output is an example of system threshold information, and [Table 391: Output fields: system thresholds](#) 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 391: Output fields: system thresholds

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.

Label	Description
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.

23.16 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:	esa-id/vm-id	
		esa-id	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

7705 SAR Gen 2

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^{20} 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.

Values	
esa-vm:	esa-id/vm-id
	esa-id1 to 16
	vm-id1 to 4

Platforms

7705 SAR Gen 2

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
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		
=====		

23.17 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
7705 SAR Gen 2

Output
The following output is an example of system time information, and [Table 392: Output fields: system time](#) 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 392: Output fields: system time

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.

Label	Description
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
7705 SAR Gen 2

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
```

23.18 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

7705 SAR Gen 2

23.19 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

7705 SAR Gen 2

23.20 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

7705 SAR Gen 2

Output

The following output is an example of router IS-IS topology output, and [Table 393: Output fields: IS-IS topology](#) 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 393: Output fields: IS-IS topology

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.

23.21 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

7705 SAR Gen 2

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 2¹⁰ 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

7705 SAR Gen 2

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
=====
```

23.22 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

7705 SAR Gen 2

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
=====

```

23.23 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:	esa-id/vm-id	
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

23.24 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

7705 SAR Gen 2

23.25 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

7705 SAR Gen 2

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

7705 SAR Gen 2

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#
```

23.26 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
7705 SAR Gen 2

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
=====
```

23.27 tunnel

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

7705 SAR Gen 2

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:	esa-id/vm-id	
	esa-id	1 to 16
	vm-id	1 to 4

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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	Fwd-Type	In-Label	Prot-	Out-Label(s)	Interface/Tunnel-
Sid-Type	Next Hop(s)				
Inst					
ID					
10.0.33.3	Orig/Transit	70000	OSPF-0		
Node	10.0.36.3			40000	DUTF_T0
_DUTC.1.0	(B)10.0.26.2			30998	DUTF_T0
_DUTB.1.0					
10.0.44.4	Orig/Transit	70001	OSPF-0		
Node	10.0.26.2			30001	DUTF_T0
_DUTB.1.0	(B)10.0.56.5			60001	DUTF_T0
_DUTE.1.0					
10.0.55.5	Orig/Transit	70002	OSPF-0		
Node	10.0.56.5			60002	DUTF_T0
_DUTE.1.0	(B)10.0.26.2			30995	DUTF_T0
_DUTB.1.0					
Node	Terminating	70003	OSPF-0		
10.0.11.1					
Node	Orig/Transit	70004	OSPF-0		
	10.0.26.2			30004	DUTF_T0

_DUTB.1.0					
_DUTC.1.0	(B)10.0.36.3			40004	DUTF_T0
10.0.22.2					
Node	Orig/Transit 10.0.26.2	70005	OSPF-0	30005	DUTF_T0
_DUTB.1.0	(B)10.0.36.3			40004	DUTF_T0
_DUTC.1.0				20005	
10.20.1.3					
Node	Orig/Transit 10.0.36.3	70006	OSPF-0	40006	DUTF_T0
_DUTC.1.0	(B)10.0.26.2			30004	DUTF_T0
_DUTB.1.0				20006	
10.20.1.4					
Node	Orig/Transit 10.0.26.2	70007	OSPF-0	30007	DUTF_T0
_DUTB.1.0	(B)10.0.56.5			60007	DUTF_T0
_DUTE.1.0					
10.20.1.5					
Node	Orig/Transit 10.0.56.5	70008	OSPF-0	60008	DUTF_T0
_DUTE.1.0	(B)10.0.26.2			30001	DUTF_T0
_DUTB.1.0				50008	
Node	Terminating	70009	OSPF-0		
10.20.1.1					
Node	Orig/Transit 10.0.26.2	70010	OSPF-0	30010	DUTF_T0
_DUTB.1.0	(B)10.0.36.3			40010	DUTF_T0
_DUTC.1.0					
10.20.1.2					
Node	Orig/Transit 10.0.26.2	70011	OSPF-0	30011	DUTF_T0
_DUTB.1.0	(B)10.0.56.5			60001	DUTF_T0
_DUTE.1.0				50011	
Backup Node	Transit 10.0.56.5	70994	OSPF-0	60994	DUTF_T0
_DUTE.1.0					
Backup Node	Transit 10.0.26.2	70995	OSPF-0	30995	DUTF_T0
_DUTB.1.0					
Backup Node	Transit 10.0.26.2	70996	OSPF-0	30005	DUTF_T0
_DUTB.1.0					
Backup Node	Transit 10.0.26.2	70998	OSPF-0	30998	DUTF_T0
_DUTB.1.0					
Backup Node	Transit 10.0.36.3	70999	OSPF-0	40999	DUTF_T0

_DUTC.1.0					
Adjacency	Transit	262140	OSPF-0	3	DUTF_T0
_DUTB.1.0		10.0.26.2			
(B)10.0.36.3				40004	DUTF_T0
_DUTC.1.0				20005	
Adjacency	Transit	262141	OSPF-0	3	DUTF_T0
_DUTE.1.0		10.0.56.5			
Adjacency	Transit	262142	OSPF-0	3	DUTF_T0
_DUTC.1.0		10.0.36.3			
Adjacency	Transit	262143	OSPF-0	3	DUTF_T0
_DUTB.1.0		10.0.26.2			
(B)10.0.56.5				60001	DUTF_T0
_DUTE.1.0				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					
Sid-Type	Fwd-Type	In-Label	Prot-Inst	Out-Label(s)	Interface/
	Next Hop(s)				Tunnel-ID
Adjacency	Transit	262136	ISIS-0	3	ip-
10.10.2.1		10.10.2.3			
Adjacency	Transit	262137	ISIS-0	3	ip-
10.10.2.1		10.10.2.3			
Adjacency	Transit	262138	ISIS-0	3	ip-
10.10.1.1		10.10.1.2			
Adjacency	Transit	262139	ISIS-0	3	ip-
10.10.1.1		10.10.1.2			
Node	Terminating	474387	ISIS-0		
10.20.1.2					
Node	Orig/Transit	474388	ISIS-0	474388	ip-
10.10.1.1		10.10.1.2			
10.20.1.3					
Node	Orig/Transit	474389	ISIS-0	474389	ip-
10.10.2.1		10.10.2.3			
10.20.1.4					

Node	Orig/Transit	475287	ISIS-0		
10.10.1.1	10.10.1.2			475287	ip-
10.20.1.5					
Node	Orig/Transit	475288	ISIS-0		
10.10.2.1	10.10.2.3			475288	ip-
10.20.1.6					
Node	Orig/Transit	475289	ISIS-0		
10.10.1.1	10.10.1.2			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 | Fwd-Type In-Label Prot- |

Inst |

Next Hop(s) Out-

Label(s) Interface/Tunnel-ID |

Adjacency	Transit	262129	ISIS-0		
10.10.12.3	10.10.12.2			3	ip-
10.10.3.3	(B)10.10.3.2			3	ip-
Adjacency	Transit	262130	ISIS-0		
10.10.12.3	10.10.12.2			3	ip-
10.10.3.3	(B)10.10.3.2			3	ip-
Adjacency	Transit	262133	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	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-
10.10.2.3					
10.20.1.4	Orig/Transit	474389	ISIS-0		
Node	10.10.12.2			474389	ip-
10.10.12.3	(B)10.10.5.5			474389	ip-
10.10.5.3					
10.20.1.5	Orig/Transit	474390	ISIS-0		
Node	10.10.5.5			474390	ip-
10.10.5.3					
	(B)10.10.12.2			474389	ip-
10.10.12.3				474390	
10.20.1.6	Orig/Transit	474391	ISIS-0		
Node	10.10.5.5			474391	ip-
10.10.5.3					
	(B)10.10.12.2			474391	ip-
10.10.12.3					
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# 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)			Out-Label(s)	Interface/Tunnel-ID

Adjacency	Transit	262129	ISIS-0		
10.10.12.3	10.10.12.2			3	ip-
	(B)10.10.3.2			3	ip-
10.10.3.3					
Adjacency	Transit	262130	ISIS-0		
10.10.12.3	10.10.12.2			3	ip-
	(B)10.10.3.2			3	ip-
10.10.3.3					
Adjacency	Transit	262133	ISIS-0		

10.10.5.3	10.10.5.5			3	ip-
10.10.12.3	(B)10.10.12.2			474389	ip-
Adjacency	Transit	262134	ISIS-0	474390	
10.10.5.3	10.10.5.5			3	ip-
10.10.12.3	(B)10.10.12.2			474389	ip-
Adjacency	Transit	262135	ISIS-0	474390	
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-
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>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)			Out-Label(s)	Interface/Tunnel-	
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	Terminating	20623	ISIS-0 (129)			
1.1.1.4						
Node	Orig/Transit	20624	ISIS-0 (129)			
	1.2.3.2			20624	toB	
1.1.1.5						
Node	Orig/Transit	20625	ISIS-0 (129)			
	1.3.5.5			20625	toE	
1.1.1.6						
Node	Orig/Transit	20626	ISIS-0 (129)			
	1.3.5.5			20626	toE	
1.1.1.1						
Node	Orig/Transit	20631	ISIS-0 (130)			
	1.1.3.1			20631	toA	
1.1.1.3						
Node	Terminating	20633	ISIS-0 (130)			
1.1.1.4						
Node	Orig/Transit	20634	ISIS-0 (130)			
	1.2.3.2			20634	toB	
1.1.1.5						

Node	Orig/Transit	20635	ISIS-0 (130)		
1.1.1.6	1.3.5.5			20635	toE
Node	Orig/Transit	20636	ISIS-0 (130)		
1.1.1.1	1.3.5.5			20636	toE
Node	Orig/Transit	20641	ISIS-0 (131)		
1.1.1.3	1.1.3.1			20641	toA
Node	Terminating	20643	ISIS-0 (131)		
1.1.1.4	Node	Orig/Transit	20644	ISIS-0 (131)	
1.1.1.5	1.2.3.2			20644	toB
Node	Orig/Transit	20645	ISIS-0 (131)		
1.1.1.6	1.3.5.5			20645	toE
Node	Orig/Transit	20646	ISIS-0 (131)		
1.1.1.1	1.3.5.5			20646	toE
Node	Orig/Transit	20651	ISIS-0 (132)		
1.1.1.3	1.1.3.1			20651	toA
Node	Terminating	20653	ISIS-0 (132)		
1.1.1.4	Node	Orig/Transit	20654	ISIS-0 (132)	
1.1.1.5	1.2.3.2			20654	toB
Node	Orig/Transit	20655	ISIS-0 (132)		
1.1.1.6	1.3.5.5			20655	toE
Node	Orig/Transit	20656	ISIS-0 (132)		
3ffe::101:101	1.3.5.5			20656	toE
Node	Orig/Transit	20801	ISIS-0		
fe80::ce0f:1ff:fe01:2			20801	toA	
3ffe::101:102	Node	Orig/Transit	20802	ISIS-0	
3ffe::101:103	fe80::ce14:1ff:fe01:3			20802	toB
Node	Terminating	20803	ISIS-0		
3ffe::101:104	Node	Orig/Transit	20804	ISIS-0	
3ffe::101:105	fe80::ce14:1ff:fe01:3			20804	toB
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)		
	fe80::ce2c:1ff:fe01:1			20816	toE

3ffe::101:101 Node	Orig/Transit	20821	ISIS-0 (129)	20821	toA
	fe80::ce0f:1ff:fe01:2				
3ffe::101:103 Node	Terminating	20823	ISIS-0 (129)		
3ffe::101:104 Node	Orig/Transit	20824	ISIS-0 (129)	20824	toB
	fe80::ce14:1ff:fe01:3				
3ffe::101:105 Node	Orig/Transit	20825	ISIS-0 (129)	20825	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:106 Node	Orig/Transit	20826	ISIS-0 (129)	20826	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:101 Node	Orig/Transit	20831	ISIS-0 (130)	20831	toA
	fe80::ce0f:1ff:fe01:2				
3ffe::101:103 Node	Terminating	20833	ISIS-0 (130)		
3ffe::101:104 Node	Orig/Transit	20834	ISIS-0 (130)	20834	toB
	fe80::ce14:1ff:fe01:3				
3ffe::101:105 Node	Orig/Transit	20835	ISIS-0 (130)	20835	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:106 Node	Orig/Transit	20836	ISIS-0 (130)	20836	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:101 Node	Orig/Transit	20841	ISIS-0 (131)	20841	toA
	fe80::ce0f:1ff:fe01:2				
3ffe::101:103 Node	Terminating	20843	ISIS-0 (131)		
3ffe::101:104 Node	Orig/Transit	20844	ISIS-0 (131)	20844	toB
	fe80::ce14:1ff:fe01:3				
3ffe::101:105 Node	Orig/Transit	20845	ISIS-0 (131)	20845	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:106 Node	Orig/Transit	20846	ISIS-0 (131)	20846	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:101 Node	Orig/Transit	20851	ISIS-0 (132)	20851	toA
	fe80::ce0f:1ff:fe01:2				
3ffe::101:103 Node	Terminating	20853	ISIS-0 (132)		
3ffe::101:104 Node	Orig/Transit	20854	ISIS-0 (132)	20854	toB
	fe80::ce14:1ff:fe01:3				
3ffe::101:105 Node	Orig/Transit	20855	ISIS-0 (132)	20855	toE
	fe80::ce2c:1ff:fe01:1				
3ffe::101:106 Node	Orig/Transit	20856	ISIS-0 (132)	20856	toE
	fe80::ce2c:1ff:fe01:1				
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)	

ID	Next Hop(s)	Out-Label(s)	Interface/Tunnel-

---+			
1.1.1.3	Terminating	20003	IGP-Shared
Node			
1.1.1.5	Orig/Transit	20005	ISIS-0
Node	10.10.10.2	20005	To_1/1/1(E)
10.10.10.2	Transit	524287	ISIS-0
Adjacency	10.10.10.2	3	To_1/1/1(E)

---+			
No. of Entries: 3			

---+			
*A:Dut-C#			

Table 394: Output fields: tunnel group

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
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

Label	Description
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 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

7705 SAR Gen 2

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

7705 SAR Gen 2

Output

The following output is an example of system gRPC tunnel tunnel information.

Table 396: Output fields: system gRPC tunnel name 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 395: Output fields: system gRPC tunnel tunnel

Label	Description
Name	Displays the name of the tunnel.
Admin	Specifies the administrative state (Enabled, Disabled).
Oper	Specifies the operational state (Up, Down, Tran).

Label	Description
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 396: Output fields: system gRPC tunnel name

Label	Description
Name	Displays the name of the tunnel.
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

7705 SAR Gen 2

23.28 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
Keyword that displays association applicable to the specified tunnel group.

esa-vm
Displays information about the configured ESA and ESA VM.

Values	<i>esa-vm:</i>	<i>esa-id/vm-id</i>
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

mda-id
Displays information about the specified ISA.

Values	slot/mda
--------	----------

detail
Keyword that displays detailed ESA VM information.

tunnel-group-id
Displays information about the specified tunnel group ID.

Values	1 to 16
--------	---------

Platforms

7705 SAR Gen 2

Output

The following output is an example of the tunnel group information, and [Table 397: Output fields: tunnel group](#) describes the output fields.

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 scenarios in a multi-chassis setup
ISA Group        : 1
Member Pool      : DS_memberPool
Admin State      : Up
Oper State       : Up
```

```

Responder-Only      : true
Non-Active Members  : (Not Specified)
Required Active Qty  : 4
Active Members      : esa-1/1 esa-1/2 esa-2/1 esa-2/2
Reassembly (msecs)   : 2000          ISA Chassis      : 1
Oper Flags          : (Not Specified)
Grp IPsec Tnls       : 32767          Grp IPsec Max Tnls : 32768
Grp IP Tunnels       : 0              Grp IP Max Tunnels  : 4096
ISA Scale Mode       : tunnel-limit-32k
Strict ESP Seq No Ord: Disabled
SPI Range Index      : 2
Statistics Collection
  CPU Usage          : Disabled
  Gw Traffic Forward : Enabled
Last Config Change   : 09/21/2024 11:48:15

```

```

=====
Member                Weight    Hash Slots  Active
-----
esa-1/1                367         4           Yes
esa-1/2                669         7           Yes
esa-2/1                193         2           Yes
esa-2/2                755         8           Yes
-----

```

```

Number of Configured Entries: 4
Number of Active Entries: 4

```

```

=====
*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 397: Output fields: tunnel group

Label	Description
ISA Group	The ISA group ID

Label	Description
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 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
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
SPI Range Index	The SPI range index assigned to 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
Member	The ESA VM members in the tunnel group
Weight	The weight of the ESA VM for tunnel load balancing
Hash Slots	The number of hash slots
Active	The active state of the ESA VM

23.29 tunnel-interface

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

7705 SAR Gen 2

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

7705 SAR Gen 2

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
=====
```

23.30 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

7705 SAR Gen 2

23.31 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, up to 32 characters.
- detail**
Keyword that displays detailed information about the specified tunnel member pool.

Platforms

7705 SAR Gen 2

Output

The following output is an example of tunnel member pool information, and [Table 398: Output fields: tunnel member pool](#) describes the output fields.

Output Example

```
*A:node-2>show isa tunnel-member-pool "DS_memberPool" detail
=====
ISA Tunnel Member Pool : DS_memberPool
Description             : (Not Specified)
```

```
High Availability      : tunnel-limit-32k
Associated Tunnel Grps : 1
Last Config Change    : 09/21/2024 11:48:16

=====
Member                Weight      Hash Slots  Active In Group
-----
esa-1/1                367         4           1
esa-1/2                669         7           1
esa-2/1                193         2           1
esa-2/2                755         8           1
-----
Number of Configured Entries: 4
Number of Active Entries: 4
=====
```

Table 398: Output fields: tunnel member pool

Label	Description
ISA Tunnel Member Pool	The name of the ISA tunnel member pool
Description	The text description for the tunnel member pool
High Availability	The HA configuration of the tunnel member pool
Associated Tunnel Grps	The name of the tunnel groups this pool is associated with
Member	The ISA or ESA members associated with this tunnel member pool
Active In Group	The tunnel group that the MDA is active in
Last Config Change	The date and time of the last configuration change
Weight	The weight of the ESA VM for tunnel load balancing
Hash Slots	The number of hash slots
Number of Configured Entries	The number of configured entries
Number of Active Entries	The number of active entries

23.32 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.

23.33 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.

Valuesfor 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:x (eight 16-bit pieces)
 - x:x:x:x:x:d.d.d.d
 - x: [0 to FFFF] H
 - d: [0 to 255] Dfor 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
7705 SAR Gen 2

Output
The following outputs are examples of tunnel table information, and [Table 399: Output fields: tunnel table](#) 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      Metric
-----
3ffe::a14:102/128  srv6-pol  SRV6  917510  14
fpe_1.a          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  : 2222:2:2:0: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 399: Output fields: tunnel table

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 400: Output fields: tunnel table protocol detail](#) 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 400: Output fields: tunnel table protocol detail

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
Max Label Stack	The maximum number of labels that can be added onto an existing MPLS header
LSP Weight	The LSP weight

23.34 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

7705 SAR Gen 2

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#
```

23.35 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

7705 SAR Gen 2

```
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

7705 SAR Gen 2

```
twamp
```

Syntax

```
twamp
```

Context

[\[Tree\]](#) (tools>dump>test-oam twamp)

Full Context

```
tools dump test-oam twamp
```

Description

This command dumps TWAMP information.

Platforms

7705 SAR Gen 2

23.36 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

7705 SAR Gen 2

twamp-light

Syntax

twamp-light

Context

[\[Tree\]](#) (show>service>id twamp-light)

[\[Tree\]](#) (show>router twamp-light)

Full Context

show service id twamp-light

show router twamp-light

Description

This command displays TWAMP Light reflector information for either the base router or a specific service.

Platforms

7705 SAR Gen 2

Output

The following output is an example of TWAMP Light information, and [Table 401: 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 401: 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 (no shutdown) in configuration

Label	Description
	Down — The server or prefix is administratively disabled (shutdown) 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

7705 SAR Gen 2

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

7705 SAR Gen 2

24 u Commands

24.1 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

7705 SAR Gen 2

24.2 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

7705 SAR Gen 2

Output

The following output is an example of unreachable route table information, and [Table 402: 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                               Age           Pref Metric
Proto                                     -----
-----
2000::6/128                               00h00m38s    15    4261412865
ISIS
-----
No. of Routes: 1
=====
```

Table 402: 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

24.3 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.

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 (eight 16-bit pieces)
			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

7705 SAR Gen 2

Output

The following output is an example of unreachable-routes information, and [Table 403: 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 403: 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

24.4 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

7705 SAR Gen 2

24.5 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

7705 SAR Gen 2

24.6 uptime

uptime

Syntax

uptime

Context

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

Full Context

show uptime

Description

This command displays the time since the system started.

Platforms

7705 SAR Gen 2

Output

The following output is an example of uptime information, and [Table 404: Output fields: uptime](#) 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 404: Output fields: uptime

Label	Description
System Up Time	Displays the length of time the system has been up in days, hr:min:sec format.

24.7 user

user

Syntax

```
user [user-name] [detail]
user [user-name] logout
```

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.
- logout**
Displays information about any users who are currently locked out.

Platforms

7705 SAR Gen 2

Output

The following outputs are examples of user output information, and [Table 405: Output fields: system security user](#) describes the output fields.

Output example

```
A:node-2# show system security user

=====
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
=====

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 405: Output fields: system security user

Label	Description
User ID	The name of a system user.
Users	
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.

Label	Description
	n — Password authentication is not based on the local password database.
Number of users	The total number of listed users.
User Configuration Detail	
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. 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.
SNMP Parameters	
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.
Currently Failed Login Attempts	
Remaining Login Attempts	The number of login attempts remaining before the user is locked out.

Label	Description
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 406: 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

24.8 users

users

Syntax
users

Context
[\[Tree\]](#) (show users)

Full Context
show users

Description
Displays console user login and connection information.

Platforms
7705 SAR Gen 2

Output
The following output is an example of user information, and [Table 407: Output fields: users](#) describes the output fields.

Output example: Console users

```
*A:node-1# show users
=====
User      Session ID  From      Type      Login time      Idle time
=====
6         --         --         Console   --              3d 10:11:02 --
admin
83        192.168.0.10 SSHv2     120CT2018 20:44:15    0d 00:00:50 A-
admin
#84       192.168.0.10 SSHv2     120CT2018 21:09:25    0d 00:00:00 --
-----
Number of users: 2
'#' indicates the current active session
'A' indicates user is in admin mode
=====
```

Table 407: Output fields: users

Label	Description
User	The user name.

Label	Description
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.

25 v Commands

25.1 version

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

7705 SAR Gen 2

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

7705 SAR Gen 2

version

Syntax

version

Context

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

Full Context

show version

Description

This command displays system version information.

Platforms

7705 SAR Gen 2

25.2 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

7705 SAR Gen 2

Output

The following output is an example of system security views.

[Table 408: Output fields: system security view](#) 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 408: Output fields: system security view

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 view 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.

25.3 violators

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 XMAs).

Values 1 to 8

Platforms

7705 SAR Gen 2

Output

Users Output

Table 409: Output fields: 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 409: Output fields: parameters

Label	Description
Interface	The name of the router interface

Label	Description
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.

25.4 virtual

virtual

Syntax
virtual

Context
[\[Tree\]](#) (show>card virtual)

Full Context
show card virtual

Description
Commands in this context display virtual card information.

Platforms
7705 SAR Gen 2

25.5 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

7705 SAR Gen 2

Output

The following output is an example of OSPF virtual link information, and [Table 410: Output fields: OSPF virtual link](#) 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 410: Output fields: OSPF virtual link

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.
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.

Label	Description
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.
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.

Label	Description
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.
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

7705 SAR Gen 2

Output

The following output is an example of OSPFv3 virtual link information, and [Table 411: Output fields: OSPF3 virtual link](#) 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 411: Output fields: OSPF3 virtual link

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.
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.

Label	Description
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.
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.

Label	Description
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.
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>ospf virtual-link)

[\[Tree\]](#) (monitor>router>ospf3 virtual-link)

Full Context

monitor router ospf virtual-link

monitor router ospf3 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

7705 SAR Gen 2

25.6 virtual-neighbor

virtual-neighbor

Syntax

virtual-neighbor [**remote** *ip-address*] [**detail**]

Context

[\[Tree\]](#) (show>router>ospf3 virtual-neighbor)

[\[Tree\]](#) (show>router>ospf virtual-neighbor)

Full Context

show router ospf3 virtual-neighbor

show router ospf 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

7705 SAR Gen 2

Output

OSPF Virtual Neighbor Output

[Table 412: Output fields: OSPF virtual neighbor](#) describes OSPF virtual neighbor output fields.

Table 412: Output fields: OSPF virtual neighbor

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.
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.

Label	Description
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.
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

7705 SAR Gen 2

25.7 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

7705 SAR Gen 2

Output

The following output is an example of VLAN-aware bundle information and [Table 413: Output fields: VLAN-aware bundle](#) 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<br>Transport:Tnl-Id                 | Source-Identifier    | Type<br>Age | Last Change       |
|--------|-----------------------------------------|----------------------|-------------|-------------------|
| 1      | 00:00:00:11:11:11                       | srv6-1:<br>10.20.1.2 | EvpnS:P     | 12/13/23 16:55:23 |
| 1      | 222:1:1:1:1:e572::<br>00:00:00:11:11:12 | srv6-1:<br>10.20.1.2 | EvpnS:P     | 12/13/23 16:55:23 |
|        | 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<br>Transport:Tnl-Id | Source-Identifier       | Type<br>Age | Last Change       |
|--------|-------------------------|-------------------------|-------------|-------------------|
| 2      | 00:00:00:11:11:11       | vxlan-1:<br>10.20.1.2:2 | EvpnS:P     | 12/13/23 16:55:50 |
| 2      | 00:00:00:11:11:12       | vxlan-1:<br>10.20.1.2:2 | EvpnS:P     | 12/13/23 16:55:59 |
| 2      | 00:02:fe:ff:ff:3f       | vxlan-1:<br>10.20.1.2:2 | EvpnS:P     | 12/13/23 16:42:24 |
| 2      | 00:03:fe:ff:ff:3f       | vxlan-1:<br>10.20.1.3:2 | EvpnS:P     | 12/13/23 16:42:21 |
| 2      | 00:04:fe:ff:ff:3f       | cpm                     | Intf        | 12/13/23 16:41:45 |
| 2      | 00:05:fe:ff:ff:3f       | vxlan-1:<br>10.20.1.5:2 | EvpnS:P     | 12/13/23 16:42:22 |


=====
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
2          00:04:fe:ff:ff:3f 10.20.1.3:2          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 evpn-mpls
```

```
=====
Service Id: 1 Name: mac_vrf_1
=====
```

```
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: 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          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: 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 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: 3 Name: mac_vrf_3					
=====					
BGP EVPN-MPLS Dest (Instance 1)					
=====					
TEP Address	Transport:Tnl	Egr Label	Oper State	Mcast	Num 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 413: Output fields: VLAN-aware bundle

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

25.8 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

7705 SAR Gen 2

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#
```

25.9 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

```
7705 SAR Gen 2
```

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
Auto Edge          : enabled          Root Guard         : disabled
```

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		
Use Multi-Pt Shared	: disabled	Agg Rate Limit	: Max
Policer Pol	: n/a		
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		
=====			

25.10 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

7705 SAR Gen 2

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
=====
```

25.11 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

7705 SAR Gen 2

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
=====
```

25.12 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
7705 SAR Gen 2

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
=====
```

25.13 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

7705 SAR Gen 2

25.14 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

7705 SAR Gen 2

25.15 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

7705 SAR Gen 2

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 414: Output fields: VRF export test information

Label	Description
Dest prefix	Displays the destination IPv4 or IPv6 prefix/mask.
Protocol	Displays the protocol type.

25.16 vrrp

vrrp

Syntax

vrrp

Context

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

Full Context

clear vrrp

Description

Commands in this context clear and reset VRRP entities.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

vrrp

Syntax

vrrp

Context

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

Full Context

show router vrrp

Description

This command displays information VRRP instances.

Platforms

7705 SAR Gen 2

vrrp

Syntax

vrrp

Context

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

Full Context

show vrrp

Description

Commands in this context display information related to VRRP policies.

Platforms

7705 SAR Gen 2

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

7705 SAR Gen 2

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

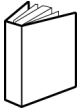
Description

Commands in this context dump web or HTTP redirection.

Platforms

7705 SAR Gen 2

Customer document and product support



Customer documentation

[Customer documentation welcome page](#)



Technical support

[Product support portal](#)



Documentation feedback

[Customer documentation feedback](#)