Show Commands

aggregate

Syntax **aggregate** [*family*] [**active**]

Context show>router

Description This command displays aggregate routes.

Parameters *family* — Specifies to display IPv4 or IPv6 aggregate routes.

Values ipv4, ipv6

active — When the active keyword is specified, inactive aggregates are filtered out.

Sample Output

```
*A:CPM133>config>router# show router aggregate
===============================================================================
Aggregates (Router: Base)
===============================================================================
Prefix                                          Aggr IP-Address   Aggr AS
   Summary                                         AS Set          State
     NextHop                                     Community      NextHopType
-------------------------------------------------------------------------------
10.0.0.0/8                                      0.0.0.0          0
   False                                          False           Inactive
                                                100:33         Blackhole
-------------------------------------------------------------------------------
No. of Aggregates: 1
===============================================================================
*A:CPM133>config>router#
```

arp

Syntax **arp** [*ip-int-name* | *ip-address/mask* | **mac** *ieee-mac-address* | **summary**] [**local** | **dynamic** | **static** | **managed**]

Context show>router

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-address/mask* — Only displays ARP entries associated with the specified IP address and mask.

ip-int-name — Only displays ARP entries associated with the specified IP interface name.

mac *ieee-mac-addr* **—** Only displays ARP entries associated with the specified MAC address.

summary — Displays an abbreviate list of ARP entries.

[**local** | **dynamic** | **static** | **managed**] — Only displays ARP information associated with the keyword.

Output **ARP Table Output —** The following table describes the ARP table output fields:

Label	Description
IP Address	The IP address of the ARP entry.
MAC Address	The MAC address of the ARP entry.
Expiry	The age of the ARP entry.
Type	Dyn – The ARP entry is a dynamic ARP entry. Inv – The ARP entry is an inactive static ARP entry (invalid). Oth – The ARP entry is a local or system ARP entry. Sta – The ARP entry is an active static ARP entry.
*Man	The ARP entry is a managed ARP entry.
Int	The ARP entry is an internal ARP entry.
[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.

Sample Output

```
*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 Oth    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 Oth[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    Oth  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#
```

authentication

Syntax **authentication**

Context show>router

Description This command enables the command to display authentication statistics.

statistics

Syntax **statistics**
statistics interface [*ip-int-name* | *ip-address*]
statistics policy *name*

Context show>router>authentication

Description This command displays interface or policy authentication statistics.

Parameters **interface** [*ip-int-name* | *ip-address*] — Specifies an existing interface name or IP address.

Values *ip-int-name:* 32 chars max
ip-address: a.b.c.d

policy *name* — Specifies an existing policy name.

Output **Authentication Statistics Output —** The following table describes the show authentication statistics output fields:

Label	Description
Client Packets Authenticate Fail	The number of packets that failed authentication.
Client Packets Authenticate Ok	The number of packets that were authenticated.

Sample Output

```
A:ALU-3>show>router>auth# statistics
===============================================================
Authentication Global Statistics
===============================================================
Client Packets Authenticate Fail     : 0
```

```
Client Packets Authenticate Ok       : 12
===============================================================
A:ALU-3>
```

bfd

Syntax **bfd**

Context show>router

Description This command enables the context to display bi-directional forwarding detection (BFD) information.

Sample Output

```
*A:Dut-D# show router 3 bfd session
===============================================================================
BFD Session
===============================================================================
InterfaceState                 Tx Intvl  Rx Intvl  Multipl
  Remote Address               Protocols             Tx Pkts   Rx Pkts   Type
-------------------------------------------------------------------------------
ies-3-121.1.3.3                Up (3)                10        10        3
   121.1.3.2                   ospf2                 N/A       N/A       cpm-np
ies-3-122.1.4.3                Up (3)                100       100       3
   122.1.4.2                   pim                   455       464       iom
-------------------------------------------------------------------------------
No. of BFD sessions: 2
===============================================================================
*A:Dut-D#


*A:Dut-C# show router bfd session src 11.120.1.4 dest 11.120.1.3
===============================================================================
BFD Session
===============================================================================
Remote Address : 11.120.1.3
Admin State    : Up                        Oper State       : Up (3)
Protocols      : static
Rx Interval    : 10                        Tx Interval      : 10
Multiplier     : 3                         Echo Interval    : 0
Up Time        : 1d 19:03:28               Up Transitions   : 2
Down Time      : None                      Down Transitions : 1
                                           Version Mismatch : 0
Forwarding Information
Local Discr    : 19269                     Local State      : Up (3)
Local Diag     : 0 (None)                  Local Mode       : Async
Local Min Tx   : 10                        Local Mult       : 3
Last Sent (ms) : 6                         Local Min Rx     : 10
Type           : cpm-np
Remote Discr   : 5101                      Remote State     : Up (3)
Remote Diag    : 0 (None)                  Remote Mode      : Async
Remote Min Tx  : 1000                      Remote Mult      : 3
Last Recv (ms) : 367                       Remote Min Rx    : 10
===============================================================================
*A:Dut-C#
```

bfd-template

Syntax **bfd-template** *template-name*

Context show>router>bfd

Description This command displays BFD template information.

Sample Output

```
*A:mlstp-dutA# 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
===============================================================================
```

interface

Syntax **interface** *[interface-name*]

Context show>router>bfd

Description This command displays interface information.

Output **BFD interface Output —** The following table describes the show BFD interface output fields:

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.

Sample Output

```
*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
...
===============================================================================
*A:Dut-B#
```

session

Syntax **session** [**src** *ip-address* [**dst** *ip-address*] | **detail**]
session [**type** *type*]
session [**summary**]

Context show>router>bfd

Description This command displays session information.

Parameters *ip-address* — Only displays the interface information associated with the specified IP address.

Values ipv4-address a.b.c.d (host bits must be 0)

type — Specifies the session type.

Values iom | central | cpm-np

Output **BFD Session Output —** The following table describes the show BFD session output fields:

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.

Sample Output

```
A:Dut-B# show router bfd session
===============================================================================
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             50971     50718     iom
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)               500       500       3
   10.2.1.3                    pim isis             50968     50718     iom
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
...
===============================================================================
*A:Dut-B#


A:Dut-B# 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:Dut-B#

*A:Dut-B# show router bfd session src FE80::A0A:A02-port-1-10 dest FE80::A0A:A03-port-
1-10
===============================================================================
BFD Session
===============================================================================
Remote Address : FE80::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:Dut-D#


*A:Dut-B# 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:Dut-B#


*A:Dut-B# 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:Dut-B#


*A:Dut-D# show router bfd session summary
==============================
BFD Session Summary
==============================
Termination   Session Count
------------------------------
central                   0
cpm-np                  500
iom, slot 1               0
iom, slot 2               0
iom, slot 3             250
iom, slot 4               0
iom, slot 5               0

Total                   750
==============================
*A:Dut-D#
```

dhcp

Syntax **dhcp**

Context show>router

Description This command enables the context to display DHCP related information.

dhcp6

Syntax **dhcp6**

Context show>router

Description This command enables the context to display DHCP6 related information.

statistics

Syntax **statistics** [*ip-int-name* | *ip-address*]

Context show>router>dhcp
show>router>dhcp6

Description This command displays statistics for DHCP relay and DHCP snooping.

If no IP address or interface name is specified, then all configured interfaces are displayed.

If an IP address or interface name is specified, then only data regarding the specified interface is displayed.

Parameters *ip-int-name* | *ip-address* — Displays statistics for the specified IP interface.

Output **Show DHCP Statistics Output —** The following table describes the output fields for DHCP. statistics.

Label	Description
Received Packets	The number of packets received from the DHCP clients.
Transmitted Packets	The number of packets transmitted to the DHCP clients.
Received Malformed Packets	The number of malformed packets received from the DHCP clients.
Received 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.
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.

Sample Output

```
A:ALA-1# show router dhcp6 statistics
===============================================================================
DHCP6 statistics (Router: Base)
===============================================================================
Msg-type                        Rx             Tx             Dropped
-------------------------------------------------------------------------------
1 SOLICIT                       0              0              0
2 ADVERTISE                     0              0              0
3 REQUEST                       0              0              0
4 CONFIRM                       0              0              0
5 RENEW                         0              0              0
6 REBIND                        0              0              0
```

```
7 REPLY                       0             0             0
8 RELEASE                     0             0             0
9 DECLINE                     0             0             0
10 RECONFIGURE                0             0             0
11 INFO_REQUEST               0             0             0
12 RELAY_FORW                 0             0             0
13 RELAY_REPLY                0             0             0
-------------------------------------------------------------------------------
Dhcp6 Drop Reason Counters :
-------------------------------------------------------------------------------
 1 Dhcp6 oper state is not Up on src itf                          0
 2 Dhcp6 oper state is not Up on dst itf                          0
 3 Relay Reply Msg on Client Itf                                  0
 4 Hop Count Limit reached                                        0
 5 Missing Relay Msg option, or illegal msg type                  0
 6 Unable to determine destinatinon client Itf                    0
 7 Out of Memory                                                  0
 8 No global Pfx on Client Itf                                    0
 9 Unable to determine src Ip Addr                                0
10 No route to server                                             0
11 Subscr. Mgmt. Update failed                                    0
12 Received Relay Forw Message                                    0
13 Packet too small to contain valid dhcp6 msg                    0
14 Server cannot respond to this message                          0
15 No Server Id option in msg from server                         0
16 Missing or illegal Client Id option in client msg              0
17 Server Id option in client msg                                 0
18 Server DUID in client msg does not match our own               0
19 Client sent message to unicast while not allowed               0
20 Client sent message with illegal src Ip address                0
21 Client message type not supported in pfx delegation            0
22 Nbr of addrs or pfxs exceeds allowed max (128) in msg          0
23 Unable to resolve client's mac address                         0
24 The Client was assigned an illegal address                     0
25 Illegal msg encoding                                           0
===============================================================================
A:ALA-1#
```

summary

Syntax **summary**

Context show>router>dhcp

Description Display the status of the DHCP Relay and DHCP Snooping functions on each interface.

Output **Show DHCP Summary Output —** The following table describes the output fields for DHCP summary.

Label	Description
Interface Name	Name of the router interface.
Info Option	Indicates whether Option 82 processing is enabled on the interface.

Auto Filter	Indicates whether IP Auto Filter is enabled on the interface.
Snoop	Indicates whether Auto ARP table population is enabled on the interface.
Interfaces	Indicates the total number of router interfaces on the router.

Sample Output

```
A:ALA-1# show router dhcp summary
===============================================================================
DHCP6 Summary (Router: Base)
===============================================================================
Interface Name                  Nbr      Used/Max Relay     Admin  Oper Relay
  SapId                         Resol.   Used/Max Server    Admin  Oper Server
-------------------------------------------------------------------------------
interfaceServiceDefault         No          0/0             Up     NoServerCo*
  sap:1/2/12:1                              0/8000          Up     Up
interfaceService                No          0/0             Down   Down
  sap:1/2/1                                 0/8000          Down   Down
interfaceServiceNonDefault      No          0/0             Up     NoServerCo*
  sap:1/2/12:2                              0/8000          Down   Down
ip-61.4.113.4                   Yes       575/8000          Up     Up
  sap:1/1/1:1                              580/8000          Up     Up
===============================================================================
A:ALA-1#
```

ecmp

Syntax **ecmp**

Context show>router

Description This command displays the ECMP settings for the router.

Output **ECMP Settings Output —** The following table describes the output fields for the router ECMP settings.

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.

Sample Output

```
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
===============================================================================
```

fib

Syntax **fib** *slot-number* [*family*] [*ip-prefix/prefix-length*] [**longer**] [**secondary**] [**exclude-services**]
fib *slot-number* [*family*] **summary**
fib *slot-number* **nh-table-usage**

Context show>router

Description This command displays the active FIB entries for a specific IOM.

Parameters *slot-number* — Displays routes only matching the specified chassis slot number.

Default all IOMs

Values 1 — 10

family — Displays the router IP interface table to display.

Values **ipv4** — Displays only those peers that have the IPv4 family enabled.
ipv6 — Displays the peers that are IPv6-capable.

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 — 32
Values	ipv6-prefix:	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
	ipv6-prefix-length:	0 — 128

longer — Displays FIB entries matching the *ip-prefix*/*mask* and routes with longer masks.

secondary — Displays secondary VRF ID information.

summary — Displays summary FIB information for the specified slot number.

nh-table-usage — Displays next-hop table usage.

Sample Output

```
show router fib 1 131.132.133.134/32
===============================================================================
FIB Display
===============================================================================
Prefix                                                          Protocol
    NextHop
-------------------------------------------------------------------------------
131.132.133.134/32                                              OSPF
    66.66.66.66 (loop7)
    Next-hop type: tunneled, Owner: RSVP, Tunnel-ID: <out-ifindex-from-route>
-------------------------------------------------------------------------------
Total Entries : 1
-------------------------------------------------------------------------------
===============================================================================

*A:Dut-C# show router fib 1 1.1.1.1/32
===============================================================================================
FIB Display
===============================================================================================
Prefix                                                          Protocol
    NextHop
-----------------------------------------------------------------------------------------------
1.1.1.1/32                                                      BGP
    10.20.1.1 (Transport:RSVP LSP:1)
-----------------------------------------------------------------------------------------------
Total Entries : 1
-----------------------------------------------------------------------------------------------
===============================================================================================
*A:Dut-C# show router fib 1
===============================================================================================
FIB Display
===============================================================================================
Prefix                                                          Protocol
    NextHop
-----------------------------------------------------------------------------------------------
1.1.2.0/24                                                      ISIS
    1.1.3.1 (to_Dut-A)
    1.2.3.2 (to_Dut-B)
1.1.3.0/24                                                      LOCAL
    1.1.3.0 (to_Dut-A)
1.1.9.0/24                                                      ISIS
    1.1.3.1 (to_Dut-A)
1.2.3.0/24                                                      LOCAL
    1.2.3.0 (to_Dut-B)
1.2.9.0/24                                                      ISIS
    1.2.3.2 (to_Dut-B)
10.12.0.0/24                                                    LOCAL
    10.12.0.0 (itfToArborCP_02)
10.20.1.1/32                                                    ISIS
    1.1.3.1 (to_Dut-A)
```

```
10.20.1.2/32                                                    ISIS
    1.2.3.2 (to_Dut-B)
10.20.1.3/32                                                    LOCAL
    10.20.1.3 (system)
20.12.0.43/32                                                   STATIC
    vprn1:mda-1-1
20.12.0.44/32                                                   STATIC
    vprn1:mda-2-1
20.12.0.45/32                                                   STATIC
    vprn1:mda-2-2
20.12.0.46/32                                                   STATIC
    vprn1:mda-3-1
100.0.0.1/32                                                    TMS
    vprn1:mda-1-1
    vprn1:mda-3-1
138.203.71.202/32                                               STATIC
    10.12.0.2 (itfToArborCP_02)
-------------------------------------------------------------------------------
Total Entries : 15
-------------------------------------------------------------------------------
===============================================================================
```

```
*A:Dut-C>config>router>mpls>lsp# show router fib 1 5.3.0.1/32 extensive

===============================================================================
FIB Display (Router: Base)
===============================================================================
Dest Prefix             : 5.3.0.1/32
  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  : 1.0.0.2 (RSVP tunnel:115)
      ECMP-Weight       : 1
    Resolving Next-Hop  : 1.0.0.2 (RSVP tunnel:61443)
      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)
      ECMP-Weight       : 20
    Resolving Next-Hop  : 1.0.0.3 (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              : 1.0.0.3 (RSVP tunnel:94)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    ECMP-Weight         : 20
  Next-Hop              : 1.0.0.3 (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              : 1.0.0.2 (RSVP tunnel:128)
    QoS                 : Priority=n/c, FC=n/c
```

```
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 1
    ECMP-Weight         : 10
  Next-Hop              : 1.0.0.2 (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              : 1.0.0.2 (RSVP tunnel:128)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    ECMP-Weight         : 10
  Next-Hop              : 1.0.0.2 (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
===============================================================================
```

fp-tunnel-table

Syntax **fp-tunnel-table** *slot-number* [*ip-prefix/prefix-length*]

Context show>router

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 (**configure>router>bgp>next-hop-resolution>shortcut-tunnel**)
- IGP shortcut (**config>router>isis**[**ospf**]**>rsvp-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 — 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 set to 0)
ipv4-prefix-length:		0 — 32
ipv6	ipv6-prefix[/pref*:	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
	prefix-length:	1 — 128ipv6

Sample Output

```
*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                                                 Protocol   Tunnel-ID
       Lbl               NextHop           Intf/Tunnel
-------------------------------------------------------------------------------
4.0.0.1/32                                                  SR-ISIS-0   -
       20001             1.3.4.4           2/1/3:1
       20001/21005       1.2.3.2(B)        1/1/2
10.20.1.2/32                                                SR-ISIS-0   -
       21002             1.2.3.2           1/1/2
       21002/21005       1.3.4.4(B)        2/1/3:1
10.20.1.4/32                                                SR-ISIS-0   -
       21004             1.3.4.4           2/1/3:1
       21004/21005       1.2.3.2(B)        1/1/2
10.20.1.5/32                                                SR-ISIS-0   -
       21005             1.2.3.2           1/1/2
       21005             1.3.4.4(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                                                 Protocol   Tunnel-ID
       Lbl               NextHop           Intf/Tunnel
-------------------------------------------------------------------------------
1.1.3.1/32                                                  SR          -
       3                 1.1.3.1           1/1/1
1.2.3.2/32                                                  SR          -
       3                 1.2.3.2           1/1/2:1
1.3.5.5/32                                                  SR          -
       3                 1.3.5.5           2/1/1
2.2.3.2/32                                                  SR          -
       3                 2.2.3.2           1/1/2:2
10.20.1.1/32                                                SR-OSPF-0   -
       21011             1.1.3.1           1/1/1
```

```
       22011             1.2.3.2(B)        1/1/2:1
10.20.1.2/32                                          SR-OSPF-0   -
       22022             2.2.3.2           1/1/2:2
       24022/25044       1.3.5.5(B)        2/1/1
10.20.1.4/32                                          SR-OSPF-0   -
       25044             1.3.5.5           2/1/1
       22044             2.2.3.2           1/1/2:2
10.20.1.5/32                                          SR-OSPF-0   -
       25055             1.3.5.5           2/1/1
       24055/22044       2.2.3.2(B)        1/1/2:2
10.20.1.6/32                                          SR-OSPF-0   -
       25066             1.3.5.5           2/1/1
       24066/22044       2.2.3.2(B)        1/1/2:2
-------------------------------------------------------------------------------
Total Entries : 9
-------------------------------------------------------------------------------
===============================================================================
*A:Dut-C#
```

icmp6

Syntax **icmp6**

Context show>router

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.

Output **icmp6 Output —** The following table describes the show router icmp6 output fields:

Label	Description
Total	The total number of all messages.
Destination Unreachable	The number of message that did not reach the destination.
Time Exceeded	The number of messages that exceeded the time threshold.
Echo Request	The number of echo requests.
Router Solicits	The number of times the local router was solicited.
Neighbor Solicits	The number of times the neighbor router was solicited.
Errors	The number of error messages.
Redirects	The number of packet redirects.
Pkt Too big	The number of packets that exceed appropriate size.

Label	Description (Continued)
Echo Reply	The number of echo replies.
Router Advertise-ments	The number of times the router advertised its location.
Neighbor Adver-tisements	The number of times the neighbor router advertised its location.

Sample Output

```
A:SR-3>show>router>auth# show router icmp6
===============================================================================
Global ICMPv6 Stats
===============================================================================
Received
Total                   : 14            Errors                  : 0
Destination Unreachable : 5             Redirects               : 5
Time Exceeded           : 0             Pkt Too Big             : 0
Echo Request            : 0             Echo Reply              : 0
Router Solicits         : 0             Router Advertisements   : 4
Neighbor Solicits       : 0             Neighbor Advertisements : 0
-------------------------------------------------------------------------------
Sent
Total                   : 10            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       : 5             Neighbor Advertisements : 5
===============================================================================
A:SR-3>show>router>auth#
```

if-attribute

Syntax **if-attribute**

Context show>router

Description This command enables the context to display interface attribute related information.

srlg-group

Syntax **srlg-group** [*name*]

Context show>router>if-attribute>srlg-group

Description This command displays SRLG statistics.

Parameters *name* — Only displays entries associated with the specified SRLG name.

Output **SRLG Output —** The following table describes the show router if-attribute srlg-group output fields:

Label	Description
Group Name	The name of the SRLG.
Group Value	The integer value of the SRLG.
Penalty Weight	The penalty weight that is assigned to the SRLG.
No. of Groups	The total number of displayed SRLGs.

Sample Output

```
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#
```

iinterface

Syntax **interface** [*interface-name*]

Context show>router>icmpv6

Description This command displays interface ICMPv6 statistics.

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

Output **icmp6 interface Output —** The following table describes the show router icmp6 interface output fields:

Label	Description
Total	The total number of all messages.
Destination Unreachable	The number of message that did not reach the destination.
Time Exceeded	The number of messages that exceeded the time threshold.
Echo Request	The number of echo requests.

Label	Description (Continued)
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 Advertise-ments	The number of times the router advertised its location.
Neighbor Adver-tisements	The number of times the neighbor router advertised its location.

Sample Output

```
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#
```

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 dist-cpu-protection [**detail**]
interface policy-accounting [**class** [*index*]]

Context show>router

Description This command displays the router IP interface table sorted by interface index.

Parameters *ip-address* — Only displays the interface information associated with the specified IP address.

Values

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

ip-int-name — Only displays the interface information associated with the specified IP interface name.

detail — Displays detailed IP interface information.

statistics — Displays packet statistics for an interface on the router.

Note: The **show router interface statistics** command also shows the MPLS statistics that are shown in using the s**how router mpls interface statistics** command. This allows the operator to see MPLS statistics from interfaces that are not added to MPLS, such as a carrier's network interfaces. See “Sample Output” on page 243 for an example of the MPLS fields that are displayed. These fields are displayed regardless of the state of MPLS.

summary — Displays summary IP interface information for the router.

exclude-services — Displays IP interface information, excluding IP interfaces configured for customer services. Only core network IP interfaces are displayed.

family — Specifies the router IP interface family to display.

Values **ipv4** — Displays only those peers that have the IPv4 family enabled.
Values **ipv6** — Displays the peers that are IPv6-capable.

Output **Standard IP Interface Output —** The following table describes the standard output fields for an IP interface.

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.

Label	Description (Continued)
	Sec — The IP address for the IP interface is a secondary address on the IP interface.
IP-Address	The IP address and subnet mask length of the IP interface. n/a — Indicates no IP address has been assigned to the IP interface.
Adm	Down — The IP interface is administratively disabled. Up — The IP interface is administratively enabled.
Opr	Down — The IP interface is operationally disabled. Up — The IP interface is operationally disabled.
Mode	Network — The IP interface is a network/core IP interface. Service — The IP interface is a service IP interface.
Port/SAP Id	The physical network port or the SAP identifier associated with the IP interface.

Sample Output

```
*A:Dut-C# show router interface "DUTC_TO_DUTB.1.0" detail
===============================================================================Interface Table
(Router: Base)
===============================================================================
-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : DUTC_TO_DUTB.1.0
Admin State      : Up                    Oper (v4/v6)      : Up/Up
Protocols        : OSPFv2
IP Addr/mask     : 1.0.23.3/24           Address Type      : Primary
IGP Inhibit      : Disabled              Broadcast Address : Host-ones
HoldUp-Time      : 0                     Track Srrp Inst   : 0
IPv6 Addr    : 3FFE::100:1703/120                                PREFERRED
HoldUp-Time      : 0                     Track Srrp Inst   : 0
IP Addr/mask     : 51.0.23.3/24          Address Type      : Secondary
IGP Inhibit      : Disabled              Broadcast Address : Host-ones
HoldUp-Time      : 0                     Track Srrp Inst   : 0
IPv6 Addr    : FE80::200:FF:FE00:3/64                            PREFERRED
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : (Not Specified)
If Index         : 2                     Virt. If Index    : 2
Last Oper Chg    : 01/14/2014 14:33:04   Global If Index   : 30
Lag Link Map Prof: none
Port Id          : 1/1/2:1
TOS Marking      : Trusted               If Type           : Network
Egress Filter    : none                  Ingress Filter    : none
Egr IPv6 Flt     : none                  Ingr IPv6 Flt     : none
BGP IP FlowSpec  : Disabled
BGP IPv6 FlowSpec: Disabled
SNTP B.Cast      : False                 QoS Policy        : 1
Queue-group      : None
```

```
MAC Address      : 00:00:00:00:00:03    Mac Accounting    : Disabled
Ingress stats    : Disabled             IPv6 DAD          : Enabled
TCP MSS V4       : 0                    TCP MSS V6        : 0
Arp Timeout      : 14400                IPv6 Nbr ReachTime: 30
                                        IPv6 stale time(s): 14400
IP Oper MTU      : 1500                 ICMP Mask Reply   : True
Arp Populate     : Disabled
Cflowd           : None
LdpSyncTimer     : None                 Strip-Label       : Disabled
LSR Load Balance : system
EGR Load Balance : both
TEID Load Balance: Disabled
uRPF Chk         : disabled
uRPF Ipv6 Chk    : disabled
PTP HW Assist    : Disabled
Rx Pkts          : N/A                  Rx Bytes          : N/A
Rx V4 Pkts       : N/A                  Rx V4 Bytes       : N/A
Rx V6 Pkts       : N/A                  Rx V6 Bytes       : N/A
Tx Pkts          : 410                  Tx Bytes          : 40204
Tx V4 Pkts       : 408                  Tx V4 Bytes       : 40032
Tx V4 Discard Pk*: 0                    Tx V4 Discard Byt*: 0
Tx V6 Pkts       : 2                    Tx V6 Bytes       : 172
Tx V6 Discard Pk*: 0                    Tx V6 Discard Byt*: 0

Proxy ARP Details
Rem Proxy ARP    : Disabled             Local Proxy ARP   : Disabled
Policies         : none

Proxy Neighbor Discovery Details
Local Pxy ND     : Disabled
Policies         : none

Secure ND Details
Secure ND        : Disabled

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 Addr: Not configured
Peer Sec DNS Addr: Not configured

Network Domains Associated
default

-------------------------------------------------------------------------------
Admin Groups
-------------------------------------------------------------------------------
"group1"                          "group2"

-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Srlg Groups
-------------------------------------------------------------------------------
"group3"                          "group4"
```

```
-------------------------------------------------------------------------
-------------------------------------------------------------------------Qos Details
-------------------------------------------------------------------------
Ing Qos Policy   : (none)              Egr Qos Policy    : (none)
Ingress FP QGrp  : (none)              Egress Port QGrp  : (none)
Ing FP QGrp Inst : (none)              Egr Port QGrp Inst: (none)
=========================================================================
* indicates that the corresponding row element may have been truncated.
*A:Dut-C#


*A:mlstp-dutA# show router interface "AtoB_1"
===============================================================================
Interface Table (Router: Base)
===============================================================================
Interface-Name                   Adm         Opr(v4/v6)  Mode    Port/SapId
   IP-Address                                                    PfxState
-------------------------------------------------------------------------------
AtoB_1                           Down        Down/--     Network 1/2/3:1
   Unnumbered If[system]                                         n/a
-------------------------------------------------------------------------------
Interfaces : 1


A:ALA-A# show router interface
===============================================================================
Interface Table (Router: Base)
===============================================================================
Interface-Name                   Adm(v4/v6)  Opr(v4/v6)  Mode    Port/SapId
   IP-Address                                                    PfxState
-------------------------------------------------------------------------------
ip-100.0.0.2                     Up/Up       Up/Up       Network lag-1
   100.0.0.2/10                                                  n/a
   3FFE:1::2/64                                                  PREFERRED
   FE80::200:FF:FE00:4/64                                        PREFERRED
ip-100.128.0.2                   Up/Up       Up/Up       Network lag-2
   100.128.0.2/10                                                n/a
   3FFE:2::2/64                                                  PREFERRED
   FE80::200:FF:FE00:4/64                                        PREFERRED
ip-11.2.4.4                      Up/Up       Down/Down   Network 3/1/1
   11.2.4.4/24                                                   n/a
   15::2/120
ip-11.4.101.4                    Up/Up       Up/Up       Network 5/2/1
   11.4.101.4/24                                                 n/a
   3FFE::B04:6504/120                                            PREFERRED
   FE80::200:FF:FE00:4/64                                        PREFERRED
ip-11.4.113.4                    Up/Up       Up/Up       Network 6/1/1
   11.4.113.4/24                                                 n/a
   3FFE::B04:7104/120                                            PREFERRED
   FE80::200:FF:FE00:4/64                                        PREFERRED
ip-11.4.114.4                    Up/Up       Up/Up       Network 6/1/2
   11.4.114.4/24                                                 n/a
   3FFE::B04:7204/120                                            PREFERRED
   FE80::200:FF:FE00:4/64                                        PREFERRED
ip-12.2.4.4                      Up/Up       Down/Down   Network 3/1/2
   12.2.4.4/24                                                   n/a
   3FFE::C02:404/120
ip-13.2.4.4                      Up/Up       Down/Down   Network 3/1/3
```

```
   13.2.4.4/24                                                  n/a
   3FFE::D02:404/120
ip-14.2.4.4                    Up/Up       Down/Down   Network 3/1/4
   14.2.4.4/24                                                  n/a
   3FFE::E02:404/120
ip-15.2.4.4                    Up/Up       Down/Down   Network 3/1/5
   15.2.4.4/24                                                  n/a
   3FFE::F02:404/120
ip-21.2.4.4                    Up/Up       Up/Up       Network 6/2/11
   21.2.4.4/24                                                  n/a
   3FFE::1502:404/120                                           PREFERRED
   FE80::200:FF:FE00:4/64                                       PREFERRED
ip-22.2.4.4                    Up/Up       Up/Up       Network 6/2/12
   22.2.4.4/24                                                  n/a
   3FFE::1602:404/120                                           PREFERRED
   FE80::200:FF:FE00:4/64                                       PREFERRED
ip-23.2.4.4                    Up/Up       Up/Up       Network 6/2/13
   23.2.4.4/24                                                  n/a
   3FFE::1702:404/120                                           PREFERRED
   FE80::200:FF:FE00:4/64                                       PREFERRED
ip-24.2.4.4                    Up/Up       Up/Up       Network 6/2/14
   24.2.4.4/24                                                  n/a
   3FFE::1802:404/120                                           PREFERRED
   FE80::200:FF:FE00:4/64                                       PREFERRED
system                         Up/Up       Up/Up       Network system
   200.200.200.4/32                                             n/a
   3FFE::C8C8:C804/128                                          PREFERRED
-------------------------------------------------------------------------------
Interfaces : 15
===============================================================================
A:ALA-A#


A:ALA-A# show router interface 10.10.0.3/32
===============================================================================
Interface Table
===============================================================================
Interface-Name                 Type IP-Address          Adm    Opr  Mode
-------------------------------------------------------------------------------
system                         Pri  10.10.0.3/32       Up     Up   Network
===============================================================================
A:ALA-A#

*A:Dut-C# show router 1 interface
===============================================================================
Interface Table (Service: 1)
===============================================================================
Interface-Name                 Adm         Opr(v4/v6)  Mode    Port/SapId
   IP-Address                                                   PfxState
-------------------------------------------------------------------------------
mda-1-1                        Up          Up/Down     TMS     1/1
   20.12.0.43/32                                                n/a
mda-2-1                        Up          Up/Down     TMS     2/1
   20.12.0.44/32                                                n/a
mda-2-2                        Up          Up/Down     TMS     2/2
   20.12.0.45/32                                                n/a
mda-3-1                        Up          Up/Down     TMS     3/1
   20.12.0.46/32                                                n/a
-------------------------------------------------------------------------------
```

```
Interfaces : 4
===============================================================================
A:ALA-A# show router interface to-ser1
===============================================================================
Interface Table
===============================================================================
Interface-Name                   Type IP-Address         Adm    Opr  Mode
-------------------------------------------------------------------------------
to-ser1                          Pri  10.10.13.3/24      Up     Up   Network
===============================================================================
A:ALA-A#
A:ALA-A# show router interface exclude-services
===============================================================================
Interface Table
===============================================================================
Interface-Name                   Type IP-Address         Adm    Opr  Mode
-------------------------------------------------------------------------------
system                           Pri  10.10.0.3/32       Up     Up   Network
to-ser1                          Pri  10.10.13.3/24      Up     Up   Network
to-ser4                          Pri  10.10.34.3/24      Up     Up   Network
to-ser5                          Pri  10.10.35.3/24      Up     Up   Network
to-ser6                          n/a  n/a                Up     Down Network
management                       Pri  192.168.2.93/20    Up     Up   Network
===============================================================================
A:ALA-A#
```

Detailed IP Interface Output — The following table describes the detailed output fields for an IP interface.

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 State	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.

Label	Description (Continued)
TOS Marker	The TOS byte value in the logged packet.
If Type	Network — The IP interface is a network/core IP interface. Service — The IP interface is a service IP interface.
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 will not reply to a received ICMP mask request. True — The IP interface will reply to a received ICMP mask request.
Arp Populate	Displays whether ARP is enabled or disabled.
Host Conn Verify	The host connectivity verification.
LdpSyncTimer	Specifies the IGP/LDP sync timer value.
uRPF Chk	Specifies whether unicast RPF (uRPF) Check is enabled on this interface.
uRPF Iv6 Chk	Specifies whether unicast RPF (uRPF) Check IPv6 is enabled on this interface.
PTP HW Assist	Specifies whether the PTP Hardware Assist function is enabled on this interface.
Cflowd	Specifies the type of Cflowd analysis that is applied to the interface. acl — ACL Cflowd analysis is applied to the interface. interface — Interface cflowd analysis is applied to the interface. none — No Cflowd analysis is applied to the interface.

Sample Output

```
B:bksim1619# show router interface "to-sim1621" detail
===============================================================================
Interface Table (Router: Base)
===============================================================================
-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : to-sim1621
Admin State      : Up                    Oper (v4/v6)      : Up/--
Protocols        : None
```

```
IP Addr/mask     : 1.1.1.2/24           Address Type      : Primary
IGP Inhibit      : Disabled             Broadcast Address : Host-ones
HoldUp-Time      : 0                    Track Srrp Inst   : 0
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : (Not Specified)
If Index         : 5                    Virt. If Index    : 5
Last Oper Chg    : 01/03/2012 13:29:19  Global If Index   : 125
Port Id          : 1/1/1
TOS Marking      : Trusted              If Type           : Network
Egress Filter    : none                 Ingress Filter    : none
Egr IPv6 Flt     : none                 Ingr IPv6 Flt     : none
BGP FlowSpec     : Disabled
SNTP B.Cast      : False                QoS Policy        : 1
Queue-group      : None
MAC Address      : ac:5e:01:01:00:01    Arp Timeout       : 14400
IP Oper MTU      : 1564                 ICMP Mask Reply   : True
Arp Populate     : Disabled
Cflowd           : None
LdpSyncTimer     : None                 Strip-Label       : Disabled
LSR Load Balance : system
uRPF Chk         : disabled
uRPF Ipv6 Chk    : disabled
PTP HW Assist    : Enabled
Rx Pkts          : 360899               Rx Bytes          : 32482050
Tx Pkts          : 724654               Tx Bytes          : 68885238
Tx V4 Pkts       : 724654               Tx V4 Bytes       : 68885238
Tx V4 Discard Pk*: 0                    Tx V4 Discard Byt*: 0
Tx V6 Pkts       : 0                    Tx V6 Bytes       : 0
Tx V6 Discard Pk*: 0                    Tx V6 Discard Byt*: 0

Proxy ARP Details
Rem Proxy ARP    : Disabled             Local Proxy ARP   : Disabled
Policies         : none

Proxy Neighbor Discovery Details
Local Pxy ND     : Disabled
Policies         : none

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 Addr: Not configured
Peer Sec DNS Addr: Not configured

Network Domains Associated
default
-------------------------------------------------------------------------------
Qos Details
-------------------------------------------------------------------------------

Ing Qos Policy   : (none)               Egr Qos Policy    : (none)
Ingress FP QGrp  : (none)               Egress Port QGrp  : (none)
Ing FP QGrp Inst : (none)               Egr Port QGrp Inst: (none)
```

```
===============================================================================
* indicates that the corresponding row element may have been truncated.
B:bksim1619#



*A:Dut-C# show router 1 interface "mda-3-1" detail
===============================================================================
Interface Table (Service: 1)
===============================================================================

-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : mda-3-1
Admin State      : Up                    Oper (v4/v6)      : Up/Down
Protocols        : None
IP Addr/mask     : 20.12.0.46/32         Address Type      : Primary
IGP Inhibit      : Disabled              Broadcast Address : Host-ones
HoldUp-Time      : 0                     Track Srrp Inst   : 0
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : tms-3-1
If Index         : 5                     Virt. If Index    : 5
Last Oper Chg    : 07/08/2011 06:49:45   Global If Index   : 95
If Type          : TMS
Rx Pkts          : 14935                 Rx Bytes          : 955840
Tx Pkts          : 14892                 Tx Bytes          : 953088
Tx Discard Pkts  : 0

TMS Health Information
Status           : Up
Version          : Peakflow TMS 5.6 (build BF42)
Mitigations      : 1
Status message   : (Unavailable)
===============================================================================
*A:Dut-C# show router 1 interface "mda-2-1" detail

===============================================================================
Interface Table (Service: 1)
===============================================================================

-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : mda-2-1
Admin State      : Up                    Oper (v4/v6)      : Up/Down
Protocols        : None
IP Addr/mask     : 20.12.0.44/32         Address Type      : Primary
IGP Inhibit      : Disabled              Broadcast Address : Host-ones
HoldUp-Time      : 0                     Track Srrp Inst   : 0
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : tms-2-1
If Index         : 3                     Virt. If Index    : 3
Last Oper Chg    : 09/14/2011 08:39:24   Global If Index   : 122
```

```
If Type          : TMS
Rx Pkts          : 13508                Rx Bytes          : 864512
Tx Pkts          : 13552                Tx Bytes          : 867328
Tx Discard Pkts  : 0

TMS Health Information
Status           : Up
Version          : Peakflow TMS 5.6 (build BHDF)
Mitigations      : 1
Status message   : (Unavailable)
===============================================================================
with
  Rx Pkts/Rx Bytes: Offramped traffic counters
  Tx Pkts/Tx Bytes: Onramped traffic counters
  Tx Discard Pkts:  Discarded packets by TMS
It displays the #of pkts dropped while the  traffic is getting distributed to various
  It doesn't account for the pkts dropped in HW level.
  Status:  TMS status could be Up/Down
  Version: TMS software version
  Mitigations: Number of active mitigations on this TMS
  Status message: Not applicable.  For future usage
===============================================================================
```

Statistics IP Interface Output — The following table describes the packet statistics for the router IP interfaces.

Label	Description
Ifname	The interface name.
Admin State	The administrative status of the router interface.
Oper	The operational status of the router instance.

Sample Output

The following displays output if **enable-interface-statistics** is enabled for a given interface.

```
A:ALA-A# show router interface "to_ixia" statistics
===============================================================================
Interface Statistics
===============================================================================
If Name          : to_Ixia
Admin State      : Up                   Oper (v4/v6)      : Up/Up
Rx Pkts          : 6244                 Rx 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 Bytes       : 0
Tx V4 Discard Pk*: 0                    Tx V4 Discard Byt*: 0
Tx V6 Pkts       : 0                    Tx V6 Bytes       : 0
Tx V6 Discard Pk*: 0                    Tx V6 Discard Byt*: 0
uRPF Chk Fail Pk*: 6244                 uRPF Fail Bytes   : 487032
uRPF Fail V4 Pk  : 3122                 uRPF Fail V4 Byt  : 243516
uRPF Fail V6 Pk  : 3122                 uRPF Fail V6 Byt  : 243516
```

```
Mpls Rx Pkts     : 0                    Mpls Rx Bytes     : 0
Mpls Tx Pkts     : 0                    Mpls Tx Bytes     : 0
===============================================================================
* indicates that the corresponding row element may have been truncated.


*A:Dut-C# show  router interface "to_Ixia" detail
===============================================================================
Interface Table (Router: Base)
===============================================================================
-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : to_Ixia
Admin State      : Up                   Oper (v4/v6)      : Up/Up
Protocols        : None
IP Addr/mask     : 1.3.9.3/24           Address Type      : Primary
IGP Inhibit      : Disabled             Broadcast Address : Host-ones
HoldUp-Time      : 0                    Track Srrp Inst   : 0
IPv6 Addr    : 3FFE::103:903/120                                  PREFERRED
HoldUp-Time      : 0                    Track Srrp Inst   : 0
IPv6 Addr    : FE80::200:FF:FE00:3/64                             PREFERRED
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : (Not Specified)
If Index         : 3                    Virt. If Index    : 3
Last Oper Chg    : 01/27/2014 16:42:40  Global If Index   : 19
Lag Link Map Prof: none
Port Id          : 1/1/4
TOS Marking      : Trusted              If Type           : Network
Egress Filter    : none                 Ingress Filter    : none
Egr IPv6 Flt     : none                 Ingr IPv6 Flt     : none
BGP IP FlowSpec  : Disabled
BGP IPv6 FlowSpec: Disabled
SNTP B.Cast      : False                QoS Policy        : 1
Queue-group      : None
MAC Address      : 00:00:00:00:00:03    Mac Accounting    : Disabled
Ingress stats    : Enabled              IPv6 DAD          : Enabled
TCP MSS V4       : 0                    TCP MSS V6        : 0
Arp Timeout      : 14400                IPv6 Nbr ReachTime: 30
                                        IPv6 stale time(s): 14400
IP Oper MTU      : 1500                 ICMP Mask Reply   : True
Arp Populate     : Disabled
Cflowd           : None
LdpSyncTimer     : None                 Strip-Label       : Disabled
LSR Load Balance : system
EGR Load Balance : both
TEID Load Balance: Disabled
uRPF Chk         : enabled              uRPF Chk Mode     : strict
uRPF Ipv6 Chk    : enabled              uRPF Ipv6 Chk Mode: strict
PTP HW Assist    : Disabled
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 Bytes       : 0
Tx V4 Discard Pk*: 0                    Tx V4 Discard Byt*: 0
```

```
Tx V6 Pkts       : 0                    Tx V6 Bytes       : 0
Tx V6 Discard Pk*: 0                    Tx V6 Discard Byt*: 0
uRPF Chk Fail Pk*: 6244                 uRPF Fail Bytes   : 487032
uRPF Fail V4 Pk  : 3122                 uRPF Fail V4 Byt  : 243516
uRPF Fail V6 Pk  : 3122                 uRPF Fail V6 Byt  : 243516

Proxy ARP Details
Rem Proxy ARP    : Disabled             Local Proxy ARP   : Disabled
Policies         : none

Proxy Neighbor Discovery Details
Local Pxy ND     : Disabled
Policies         : none

Secure ND Details
Secure ND        : Disabled

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 Addr: Not configured
Peer Sec DNS Addr: Not configured

Network Domains Associated
default
-------------------------------------------------------------------------------
Admin Groups
-------------------------------------------------------------------------------
No Matching Entries
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
Srlg Groups
-------------------------------------------------------------------------------
No Matching Entries
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
Qos Details
-------------------------------------------------------------------------------
Ing Qos Policy   : (none)               Egr Qos Policy    : (none)
Ingress FP QGrp  : (none)               Egress Port QGrp  : (none)
Ing FP QGrp Inst : (none)               Egr Port QGrp Inst: (none)
===============================================================================
* indicates that the corresponding row element may have been truncated.
```

The following displays output if **enable-interface-statistics** is not enabled for a given interface.

```
===============================================================================
Interface Statistics
===============================================================================
If Name          : to_Ixia
Admin State      : Up                   Oper (v4/v6)      : Up/Up
Rx Pkts          : N/A                  Rx Bytes          : N/A
Rx V4 Pkts       : N/A                  Rx V4 Bytes       : N/A
Rx V6 Pkts       : N/A                  Rx V6 Bytes       : N/A
```

```
Tx Pkts          : 0                    Tx Bytes          : 0
Tx V4 Pkts       : 0                    Tx V4 Bytes       : 0
Tx V4 Discard Pk*: 0                    Tx V4 Discard Byt*: 0
Tx V6 Pkts       : 0                    Tx V6 Bytes       : 0
Tx V6 Discard Pk*: 0                    Tx V6 Discard Byt*: 0
uRPF Chk Fail Pk*: 0                    uRPF Fail Bytes   : 0
uRPF Fail V4 Pk  : 0                    uRPF Fail V4 Byt  : 0
uRPF Fail V6 Pk  : 0                    uRPF Fail V6 Byt  : 0
===============================================================================
* indicates that the corresponding row element may have been truncated.
```

```
*A:Dut-C# show router 1 interface "mda-3-1" detail
===============================================================================
Interface Table (Service: 1)
===============================================================================
-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : mda-3-1
Admin State      : Up                   Oper (v4/v6)      : Up/Down
Protocols        : None
IP Addr/mask     : 20.12.0.46/32        Address Type      : Primary
IGP Inhibit      : Disabled             Broadcast Address : Host-ones
HoldUp-Time      : 0                    Track Srrp Inst   : 0
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : tms-3-1
If Index         : 5                    Virt. If Index    : 5
Last Oper Chg    : 07/08/2011 06:49:45  Global If Index   : 95
If Type          : TMS
Rx Pkts          : 14935                Rx Bytes          : 955840
Tx Pkts          : 14892                Tx Bytes          : 953088
Tx Discard Pkts  : 0

TMS Health Information
Status           : Up
Version          : Peakflow TMS 5.6 (build BF42)
Mitigations      : 1
Status message   : (Unavailable)
===============================================================================
```

Summary IP Interface Output — The following table describes the summary output fields for the router IP interfaces.

Label	Description
Instance	The router instance number.
Router Name	The name of the router instance.
Interfaces	The number of IP interfaces in the router instance.
Admin-Up	The number of administratively enabled IP interfaces in the router instance.

Label	Description (Continued)
Oper-Up	The number of operationally enabled IP interfaces in the router instance.

Sample Output

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

Detailed IPv6 Interface Output — The following is an example of the IPv6 interface detailed output.

Sample Output

```
*A:ALA-A# show router interface ipv6 detail
===============================================================================
Interface Table (Router: Base)
===============================================================================
-------------------------------------------------------------------------------
Interface
-------------------------------------------------------------------------------
If Name          : gig-1/1/1
Admin State      : Up                   Oper (v4/v6)      : Up/Up
Protocols        : None
IPv6 Addr    : fe80::da24:ffff:fe00:0/64                          PREFERRED
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Description      : (Not Specified)
If Index         : 2                    Virt. If Index    : 2
Last Oper Chg    : 05/12/2014 15:22:37  Global If Index   : 1
Lag Link Map Prof: none
Port Id          : 1/1/1:0
TOS Marking      : Trusted              If Type           : Network
Egress Filter    : none                 Ingress Filter    : none
Egr IPv6 Flt     : none                 Ingr IPv6 Flt     : none
BGP IP FlowSpec  : Disabled
BGP IPv6 FlowSpec: Disabled
SNTP B.Cast      : False                Network QoS Policy: 1
MAC Address      : d8:5d:01:01:00:01    Mac Accounting    : Disabled
Ingress stats    : Disabled             IPv6 DAD          : Enabled
TCP MSS V4       : 0                    TCP MSS V6        : 0
ARP Timeout      : 14400s               IPv6 Nbr ReachTime: 30s
ARP Retry Timer  : 5000ms               IPv6 stale time   : 14400s
ARP Limit        : Disabled             IPv6 Nbr Limit    : Disabled
ARP Threshold    : Disabled             IPv6 Nbr Threshold: Disabled
ARP Limit Log On*: Disabled             IPv6 Nbr Log Only : Disabled
IP MTU           : (default)
```

```
IP Oper MTU      : 1500                 ICMP Mask Reply   : True
ARP Populate     : Disabled
<trimmed for brevity>
```

routes

Syntax **routes alternative**

Context show:router>isis

Description This command displays IS-IS route information.

Sample Output

```
*A:SRR# show router isis routes 1.1.1.0/24
===============================================================================
Route Table
===============================================================================
Prefix[Flags]                     Metric     Lvl/Typ    Ver.   SysID/Hostname
  NextHop                          MT         AdminTag
-------------------------------------------------------------------------------
1.1.1.0/24 [L]                    7540       1/Int.     6109   SRL
   60.60.1.1                       0           0
-------------------------------------------------------------------------------
No. of Routes: 1
Flags: L = LFA nexthop available
===============================================================================
*A:SRR#
*A:SRR# show router isis routes 1.1.1.0/24 alternative
===============================================================================
Route Table
===============================================================================
Prefix[Flags]                     Metric     Lvl/Typ    Ver.   SysID/Hostname
  NextHop                          MT         AdminTag
Alt-Nexthop                       Alt-Metric Alt-Type
-------------------------------------------------------------------------------
1.1.1.0/24                        7550       1/Int.     6114   SRL
   60.60.1.1                       0           0
   11.22.12.4 (LFA)                16784764    linkProtection
-------------------------------------------------------------------------------
No. of Routes: 1
Flags: LFA = Loop-Free Alternate nexthop
===============================================================================
*A:SRR#

*A:Dut-B# show router isis routes
===============================================================================
Route Table
===============================================================================
Prefix [Flags]                   Metric     Lvl/Typ    Ver.   SysID/Hostname
  NextHop                          MT         AdminTag
-------------------------------------------------------------------------------
10.20.1.2/32                      0          1/Int.     3      Dut-B
   0.0.0.0                         0           0
10.20.1.3/32 [L]                  10         2/Int.     2      Dut-C
```

```
   10.20.3.3                        0           0
10.20.1.4/32                       10         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.1.5/32                       20         2/Int.     3      Dut-C
   10.20.3.3                        0           0
10.20.1.6/32                       20         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.3.0/24                       10         1/Int.     3      Dut-B
   0.0.0.0                          0           0
10.20.4.0/24                       10         1/Int.     3      Dut-B
   0.0.0.0                          0           0
10.20.5.0/24                       20         2/Int.     2      Dut-C
   10.20.3.3                        0           0
10.20.6.0/24                       20         2/Int.     4      Dut-D
   10.20.4.4                        0           0
10.20.9.0/24                       20         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.10.0/24                      30         2/Int.     3      Dut-C
   10.20.3.3                        0           0
-------------------------------------------------------------------------------
Routes : 11
Flags: L = LFA nexthop available
===============================================================================
*A:Dut-B#

*A:Dut-B# show router isis routes alternative

===============================================================================
Route Table
===============================================================================
Prefix [Flags]                   Metric     Lvl/Typ    Ver.   SysID/Hostname
  NextHop                          MT         AdminTag
Alt-Nexthop                    Alt-Metric
-------------------------------------------------------------------------------
10.20.1.2/32                       0         1/Int.     3      Dut-B
   0.0.0.0                          0           0
10.20.1.3/32                       10         2/Int.     2      Dut-C
   10.20.3.3                        0           0
   10.20.3.3 (lfa)                 15
10.20.1.4/32                       10         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.1.5/32                       20         2/Int.     3      Dut-C
   10.20.3.3                        0           0
10.20.1.6/32                       20         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.3.0/24                       10         1/Int.     3      Dut-B
   0.0.0.0                          0           0
10.20.4.0/24                       10         1/Int.     3      Dut-B
   0.0.0.0                          0           0
10.20.5.0/24                       20         2/Int.     2      Dut-C
   10.20.3.3                        0           0
10.20.6.0/24                       20         2/Int.     4
4      Dut-D
   10.20.4.4                        0           0
10.20.9.0/24                       20         2/Int.     3      Dut-D
   10.20.4.4                        0           0
10.20.10.0/24                      30         2/Int.     3      Dut-C
   10.20.3.3                        0           0
-------------------------------------------------------------------------------
```

```
Routes : 11
Flags: LFA = Loop-Free Alternate nexthop
===============================================================================
*A:Dut-B#
```

bindings

Syntax **bindings active**

Context show>router>ldp

Description This command displays LDP bindings information.

Sample Output

```
*A:Dut-A# show router ldp bindings active

===============================================================================
Legend: U - Label In Use,  N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static       (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
===============================================================================
LDP IPv4 Prefix Bindings (Active)
===============================================================================
Prefix                  Op   IngLbl    EgrLbl    EgrIntf/LspId  EgrNextHop
-------------------------------------------------------------------------------
10.20.1.1/32            Pop  131071      --        --             --
10.20.1.2/32            Push   --      131071    1/1/1          10.10.1.2
10.20.1.2/32            Swap 131070    131071    1/1/1          10.10.1.2
10.20.1.2/32            Push   --      262141BU  1/1/2          10.10.2.3
10.20.1.2/32            Swap 131070    262141BU  1/1/2          10.10.2.3
10.20.1.3/32            Push   --      131069BU  1/1/1          10.10.1.2
10.20.1.3/32            Swap 131069    131069BU  1/1/1          10.10.1.2
10.20.1.3/32            Push   --      262143    1/1/2          10.10.2.3
10.20.1.3/32            Swap 131069    262143    1/1/2          10.10.2.3
10.20.1.4/32            Push   --      131068    1/1/1          10.10.1.2
10.20.1.4/32            Swap 131068    131068    1/1/1          10.10.1.2
10.20.1.4/32            Push   --      262140BU  1/1/2          10.10.2.3
10.20.1.4/32            Swap 131068    262140BU  1/1/2          10.10.2.3
10.20.1.5/32            Push   --      131067BU  1/1/1          10.10.1.2
10.20.1.5/32            Swap 131067    131067BU  1/1/1          10.10.1.2
10.20.1.5/32            Push   --      262139    1/1/2          10.10.2.3
10.20.1.5/32            Swap 131067    262139    1/1/2          10.10.2.3
10.20.1.6/32            Push   --      131066    1/1/1          10.10.1.2
10.20.1.6/32            Swap 131066    131066    1/1/1          10.10.1.2
10.20.1.6/32            Push   --      262138BU  1/1/2          10.10.2.3
10.20.1.6/32            Swap 131066    262138BU  1/1/2          10.10.2.3
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
No. of IPv4 Prefix Active Bindings: 10
===============================================================================

===============================================================================
```

```
LDP IPv6 Prefix Bindings (Active)
===============================================================================
Prefix                                  Op              IngLbl    EgrLbl
EgrNextHop                              EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

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

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

===============================================================================
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
===============================================================================
Source
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-A# show router ldp bindings

===========================================================================
LDP Bindings (IPv4 LSR ID 1.1.1.1:0)
             (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
RootAddr                                  Interface       IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
Peer
-------------------------------------------------------------------------------
100
1.1.1.1                                   Unknw             --      131051
90.90.90.2                                1/1/6
2.2.2.2:0

104
1.1.1.1                                   Unknw             --      131050
90.90.90.2                                1/1/6
2.2.2.2:0

600
1.1.1.1                                   Unknw             --      131049
90.90.90.2                                1/1/6
2.2.2.2:0

700
1.1.1.1                                   Unknw             --      131048
90.90.90.2                                1/1/6
2.2.2.2:0

800
1.1.1.1                                   Unknw             --      131047
90.90.90.2                                1/1/6
2.2.2.2:0

900
1.1.1.1                                   Unknw             --      131046
90.90.90.2                                1/1/6
2.2.2.2:0

1500
1.1.1.1                                   Unknw             --      131045
90.90.90.2                                1/1/6
2.2.2.2:0

100
6.6.6.6                                   Unknw             --      131044
90.90.90.2                                1/1/6
2.2.2.2:0

900
6.6.6.6                                   Unknw             --      131043
90.90.90.2                                1/1/6
2.2.2.2:0

-------------------------------------------------------------------------------
No. of Generic IPv4 P2MP Bindings: 9
===============================================================================

===============================================================================
LDP Generic IPv6 P2MP Bindings
===============================================================================
```

```
P2MP-Id
RootAddr                                    Interface       IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
Peer
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

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

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

===============================================================================
LDP In-Band-VPN-SSM IPv4 P2MP Bindings
===============================================================================
Source
Group                                       RD
RootAddr                                    Interface         IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
Peer
-------------------------------------------------------------------------------
1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100
```

```
-------------------------------------------------------------------------------
No. of In-Band-VPN-SSM IPv4 P2MP Bindings: 3
===============================================================================

===============================================================================
LDP In-Band-VPN-SSM IPv6 P2MP Bindings
===============================================================================
===============================================================================
Source
Group                                     RD
RootAddr                                  Interface         IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
Peer
-------------------------------------------------------------------------------
1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

-------------------------------------------------------------------------------
No. of In-Band-VPN-SSM IPv6 P2MP Bindings: 3
===============================================================================

===============================================================================
LDP Service FEC 128 Bindings
===============================================================================
Type                                        VCId       SDPId     IngLbl  LMTU
Peer                                        SvcId                EgrLbl  RMTU
-------------------------------------------------------------------------------
?-Eth                                       100        R. Src      --    None
2.2.2.2:0                                   Ukwn                 131023D 986

?-Eth                                       500        R. Src      --    None
2.2.2.2:0                                   Ukwn                 131022D 1386

?-Eth                                       2001       R. Src      --    None
2.2.2.2:0                                   Ukwn                 131019D 986

?-Eth                                       2003       R. Src      --    None
2.2.2.2:0                                   Ukwn                 131017D 986

?-Ipipe                                     1800       R. Src      --    None
2.2.2.2:0                                   Ukwn                 131014D 1486

-------------------------------------------------------------------------------
No. of VC Labels: 5
```

```
===============================================================================

===============================================================================
LDP Service FEC 129 Bindings
===============================================================================
SAII                                            AGII        IngLbl    LMTU
TAII                                            Type        EgrLbl    RMTU
Peer                                            SvcId       SDPId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================
```

mvpn

Syntax **mvpn**

Context show>router *router-instance*

Description This command displays Multicast VPN related information. The router instance must be specified.

Sample Output

```
*A:Dut-C# show router 1 mvpn
===============================================================================
MVPN 1 configuration data
===============================================================================
signaling          : Bgp                  auto-discovery     : Enabled
UMH Selection      : Highest-Ip           intersite-shared   : Enabled
vrf-import         : N/A
vrf-export         : N/A
vrf-target         : target:1:1
C-Mcast Import RT  : target:10.20.1.3:2

ipmsi              : pim-asm 224.1.1.1
admin status       : Up                   three-way-hello    : N/A
hello-interval     : N/A                  hello-multiplier   : 35 * 0.1
tracking support   : Disabled             Improved Assert    : N/A

spmsi              : pim-ssm 225.0.0.0/32
join-tlv-packing   : N/A
data-delay-interval: 3 seconds
data-threshold     : 224.0.0.0/4 --> 1 kbps

===============================================================================
```

neighbor

Syntax **neighbor** [*ip-int-name* | *ip-address* | **mac** *ieee-mac-address* | **summary**]

Context show>router

Description This command displays information about the IPv6 neighbor cache.

Parameters *ip-int-name* — Specify the IP interface name.

ip-address — Specify the address of the IPv6 interface address.

mac *ieee-mac-address* — Specify the MAC address.

summary — Displays summary neighbor information.

Output **Neighbor Output —** The following table describes neighbor output fields.

Label	Description
IPv6 Address	Displays the IPv6 address.
Interface	Displays the name of the IPv6 interface name.
MAC Address	Specifies the link-layer address.
State	Displays the current administrative state.
Exp	Displays the number of seconds until the entry expires.
Type	Displays the type of IPv6 interface.
Interface	Displays the interface name.
Rtr	Specifies whether a neighbor is a router.
Mtu	Displays the MTU size.

Sample Output

```
B:CORE2# show router neighbor
===============================================================================
Neighbor Table (Router: Base)
===============================================================================
IPv6 Address                                Interface
   MAC Address               State         Expiry          Type         RTR
-------------------------------------------------------------------------------
FE80::203:FAFF:FE78:5C88                    net1_1_2
   00:16:4d:50:17:a3         STALE         03h52m08s       Dynamic      Yes
FE80::203:FAFF:FE81:6888                    net1_2_3
   00:03:fa:1a:79:22         STALE         03h29m28s       Dynamic      Yes
-------------------------------------------------------------------------------
No. of Neighbor Entries: 2
===============================================================================
B:CORE2#
```

network-domains

Syntax **network-domains** [**detail**] [*network-domain-name*]

Context show>router

Description This command displays network-domains information.

Parameters **detail —** Displays detailed network-domains information.

network-domain-name — Displays information for a specific network domain.

Sample

```
*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#
```

policy

Syntax **policy** [*name* | **damping** | **prefix-list** *name* | **as-path** *name* | **community** *name* | **admin**]

Context show>router

Description This command displays policy-related information.

Parameters **name —** Specify an existing policy-statement name.

damping — Specify damping to display route damping profiles.

prefix-list *name* **—** Specify a prefix list name to display the route policy entries.

as-path *name* **—** Specify the route policy AS path name to display route policy entries.

community *name* **—** Specify a route policy community name to display information about a particular community member.

admin — Specify the **admin** keyword to display the entities configured in the config>router>policy-options context.

Output **Policy Output —** The following table describes policy output fields.

Label	Description
Policy	The policy name.
Description	Displays the description of the policy.

Sample Output

```
B:CORE2# show router policy
===============================================================================
Route Policies
===============================================================================
Policy                          Description
```

```
-------------------------------------------------------------------------------
fromStatic
-------------------------------------------------------------------------------
Policies : 1
===============================================================================
B:CORE2#
```

policy-edits

Syntax **policy-edits**

Context show>router

Description This command displays edited policy information.

route-table

Syntax **route-table** [*family*] [*ip-prefix*[/*prefix-length*] [**longer**|**exact**|**protocol** *protocol-name*] [**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>] extensive [all]

Context show>router

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 —** Specify 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 multicast IPv6 route table.

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 set to 0)
ipv4-prefix-length:			0 — 32
ipv6	ipv6-prefix[/pref*:		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
	prefix-length:		1 — 128ipv6

longer — Displays routes matching the *ip-prefix*/*mask* and routes with longer masks.

exact — Displays the exact route matching the *ip-prefix*/*mask* masks.

protocol *protocol-name* — Displays routes learned from the specified protocol.

Values local, sub-mgmt, managed, static, ospf, ospf3, isis, rip, aggregate, bgp, bgp-vpn

summary — Displays a route table summary information.

tunnel-endpoints — Specifies to include tunnel endpoint information.

Output **Standard Route Table Output —** The following table describes the standard output fields for the route table.

Label	Description
Dest Address	The route destination address and mask.
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.

Sample Output

```
*A:Dut-B#config>service>vprn# show router 1 route-table

===============================================================================
Route Table (Service: 1)
===============================================================================
Dest Prefix[Flags]                              Type    Proto     Age        Pref
      Next Hop[Interface Name]                                      Metric
-------------------------------------------------------------------------------
10.0.0.0/30                                     Local   Local     02h09m23s  0
       to_4007                                                      0
10.0.0.8/30                                     Remote  BGP VPN   00h06m38s  170
       1.1.1.9 (tunneled)                                           0
11.0.0.8/30                                     Remote  BGP VPN   00h06m38s  170
       1.1.1.9 (tunneled)                                           0
192.168.0.0/16 [E]                              Remote  BGP VPN   00h06m38s  170
       1.1.1.9 (tunneled)                                           0
192.168.0.0/16 [E]                              Remote  BGP VPN   00h06m38s  170
       2.1.1.9 (tunneled)                                           0
-------------------------------------------------------------------------------
No. of Routes: 4
Flags: L = LFA nexthop available    B = BGP backup route available
       E = best-external BGP route available
       n = Number of times nexthop is repeated
===============================================================================
```

```
*A:Dut-B#config>service>vprn# show router 1 route-table alternative

===============================================================================
Route Table (Service: 1)
===============================================================================
Dest Prefix[Flags]                              Type    Proto     Age        Pref
      Next Hop[Interface Name]                                      Metric
      Alt-NextHop                                                  Alt-
                                                                   Metric
-------------------------------------------------------------------------------
10.0.0.0/30                                     Local   Local     02h17m23s  0
       to_4007                                                        0
10.0.0.8/30                                     Remote  BGP VPN   00h14m37s  170
       1.1.1.9 (tunneled)                                             0
11.0.0.8/30                                     Remote  BGP VPN   00h14m37s  170
       1.1.1.9 (tunneled)                                             0
192.168.0.0/16                                  Remote  BGP VPN   00h14m37s  170
       1.1.1.9 (tunneled)                                             0
192.168.0.0/16 (Backup)                         Remote  BGP VPN   00h14m37s  170
       2.1.1.9 (tunneled)                                             0
192.168.0.0/16 (Best-ext)                       Remote  BGP       00h24m37s  170
       10.0.0.9                                                       0
-------------------------------------------------------------------------------
No. of Routes: 5
Flags: Backup = BGP backup route  LFA = Loop-Free Alternate nexthop
       Best-ext = best-external BGP route
       n = Number of times nexthop is repeated
===============================================================================

*A:Dut-B# show router route-table
===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix[Flags] Type Proto Age Pref
Next Hop[Interface Name] Metric
-------------------------------------------------------------------------------
10.10.1.0/24 Local Local 00h01m25s 0
ip-10.10.1.2 0
10.10.2.0/24 [L] Remote ISIS 00h00m58s 15
10.10.12.3 13
10.10.3.0/24 Local Local 00h01m25s 0
ip-10.10.3.2 0
10.10.4.0/24 Local Local 00h01m25s 0
ip-10.10.4.2 0
10.10.5.0/24 [L] Remote ISIS 00h00m58s 15
10.10.12.3 13
10.10.6.0/24 [L] Remote ISIS 00h00m58s 15
10.10.4.4 20
10.10.9.0/24 [L] Remote ISIS 00h00m58s 15
10.10.4.4 20
10.10.10.0/24 [L] Remote ISIS 00h00m58s 15
10.10.12.3 23
10.10.11.0/24 [L] Remote ISIS 00h00m58s 15
10.10.12.3 13
10.10.12.0/24 Local Local 00h01m25s 0
ip-10.10.12.2 0
10.20.1.1/32 [L] Remote ISIS 00h00m58s 15
10.10.1.1 10
```

```
10.20.1.2/32 Local Local 00h01m25s 0
system 0
10.20.1.3/32 [L] Remote ISIS 00h00m58s 15
10.10.12.3 3
10.20.1.4/32 [L] Remote ISIS 00h00m58s 15
10.10.4.4 10
10.20.1.5/32 [L] Remote ISIS 00h00m58s 15
10.10.12.3 13
10.20.1.6/32 [L] Remote ISIS 00h00m58s 15
10.10.4.4 20
-------------------------------------------------------------------------------
No. of Routes: 16
Flags: L = LFA nexthop available B = BGP backup route available
===============================================================================

*A:Dut-B# show router route-table alternative
===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix[Flags] Type Proto Age Pref
Next Hop[Interface Name] Metric
Alt-NextHop Alt-Metric
-------------------------------------------------------------------------------
10.10.1.0/24 Local Local 00h02m28s 0
ip-10.10.1.2 0
10.10.2.0/24 Remote ISIS 00h02m01s 15
10.10.12.3 13
10.10.1.1 (LFA) 20
10.10.3.0/24 Local Local 00h02m27s 0
ip-10.10.3.2 0
10.10.4.0/24 Local Local 00h02m28s 0
ip-10.10.4.2 0
10.10.5.0/24 Remote ISIS 00h02m01s 15
10.10.12.3 13
10.10.1.1 (LFA) 20
10.10.6.0/24 Remote ISIS 00h02m01s 15
10.10.4.4 20
10.10.12.3 (LFA) 13
10.10.9.0/24 Remote ISIS 00h02m01s 15
10.10.4.4 20
10.10.12.3 (LFA) 13
10.10.10.0/24 Remote ISIS 00h02m01s 15
10.10.12.3 23
10.10.4.4 (LFA) 20
10.10.11.0/24 Remote ISIS 00h02m01s 15
10.10.12.3 13
10.10.1.1 (LFA) 20
10.10.12.0/24 Local Local 00h02m28s 0
ip-10.10.12.2 0
10.20.1.1/32 Remote ISIS 00h02m01s 15
10.10.1.1 10
10.10.12.3 (LFA) 13
10.20.1.2/32 Local Local 00h02m28s 0
system 0
10.20.1.3/32 Remote ISIS 00h02m05s 15
10.10.12.3 3
10.10.1.1 (LFA) 20
10.20.1.4/32 Remote ISIS 00h02m05s 15
10.10.4.4 10
```

```
10.10.12.3 (LFA) 13
10.20.1.5/32 Remote ISIS 00h02m05s 15
10.10.12.3 13
10.10.4.4 (LFA) 20
10.20.1.6/32 Remote ISIS 00h02m05s 15
10.10.4.4 20
10.10.12.3 (LFA) 23
-------------------------------------------------------------------------------
No. of Routes: 16
Flags: Backup = BGP backup routeLFA = Loop-Free Alternate nexthop
===============================================================================


*A:Dut-C# show router route-table 1.1.1.1/32

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix                                     Type    Proto    Age         Pref
       Next Hop[Interface Name]                                       Metric
-------------------------------------------------------------------------------
1.1.1.1/32                                      Remote  BGP      00h00m09s   170
       10.20.1.1 (tunneled:RSVP:1)                                    0
-------------------------------------------------------------------------------
No. of Routes: 1
===============================================================================



A:ALA# show router route-table
===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix                                     Type    Proto
Age         Pref
       Next Hop[Interface Name]                                       Metric
-------------------------------------------------------------------------------
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       21.2.4.2                                                       2
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       22.2.4.2                                                       2
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       23.2.4.2                                                       2
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       24.2.4.2                                                       2
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       100.0.0.1                                                      2
11.2.103.0/24                                   Remote  OSPF
00h59m02s   10
       100.128.0.1                                                    2
11.4.101.0/24                                   Local   Local    02h14m29s   0
...
-------------------------------------------------------------------------------
A:ALA#
```

```
B:ALA-B# show router route-table 100.10.0.0 exact
===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Address Next Hop Type Proto Age Metric Pref
-------------------------------------------------------------------------------
100.10.0.0/16 Black Hole Remote Static 00h03m17s 1 5
-------------------------------------------------------------------------------
No. of Routes: 1
===============================================================================
B:ALA-B#
```

```
A:ALA-A# show router 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-A#
```

```
A:ALA-A# show router 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-A#
```

```
*A:Dut-C# show router route-table

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix[Flags]                              Type    Proto    Age         Pref
      Next Hop[Interface Name]                                      Metric
-------------------------------------------------------------------------------
1.1.2.0/24                                      Remote  ISIS     00h44m24s   15
       1.1.3.1                                                        20
1.1.2.0/24                                      Remote  ISIS     00h44m24s   15
       1.2.3.2                                                        20
1.1.3.0/24                                      Local   Local    00h44m30s   0
       to_Dut-A                                                       0
1.1.9.0/24                                      Remote  ISIS     00h44m16s   15
       1.1.3.1                                                        20
1.2.3.0/24                                      Local   Local    00h44m30s   0
       to_Dut-B                                                       0
1.2.9.0/24                                      Remote  ISIS     00h43m55s   160
       1.2.3.2                                                        10
10.12.0.0/24                                    Local   Local    00h44m29s   0
```

```
       itfToArborCP_02                                                  0
10.20.1.1/32                                Remote  ISIS     00h44m24s   15
       1.1.3.1                                                          10
10.20.1.2/32                                Remote  ISIS     00h44m28s   15
       1.2.3.2                                                          10
10.20.1.3/32                                Local   Local    00h44m32s   0
       system                                                           0
20.12.0.43/32                               Remote  Static   00h44m31s   5
       vprn1:mda-1-1                                                    1
20.12.0.44/32                               Remote  Static   00h44m31s   5
       vprn1:mda-2-1                                                    1
20.12.0.45/32                               Remote  Static   00h44m31s   5
       vprn1:mda-2-2                                                    1
20.12.0.46/32                               Remote  Static   00h44m30s   5
       vprn1:mda-3-1                                                    1
100.0.0.1/32                                Remote  TMS      00h34m39s   167
       vprn1:mda-1-1                                                    0
100.0.0.1/32                                Remote  TMS      00h34m39s   167
       vprn1:mda-3-1                                                    0
138.203.71.202/32                           Remote  Static   00h44m29s   5
       10.12.0.2                                                        1
-------------------------------------------------------------------------------
No. of Routes: 17
Flags: L = LFA nexthop available    B = BGP backup route available
       n = Number of times nexthop is repeated
===============================================================================
A:ALA-A# show router 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-A#

show router route-table 131.132.133.134/32 next-hop-type tunneled

Route Table (Router: Base)
===============================================================================
Dest Prefix                                 Type        Proto    Age             Pref
       Next Hop[Interface Name]                                   Metric
-------------------------------------------------------------------------------
131.132.133.134/32                  Remote  OSPF    00h02m09s   10
       66.66.66.66                                                      10
       Next-hop type: tunneled, Owner: RSVP, Tunnel-ID: <out-ifindex-from-route>
-------------------------------------------------------------------------------No. of Routes:
1
===============================================================================
*A:Dut-B# show router route-table next-hop-type tunneled
```

```
===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix                                     Type    Proto    Age         Pref
       Next Hop[Interface Name]                                        Metric
-------------------------------------------------------------------------------
10.10.5.0/24                                    Remote  OSPF     00h02m20s   10
       10.20.1.5 (tunneled:RSVP:1)                                     1100
10.10.10.0/24                                   Remote  OSPF     00h02m20s   10
       10.20.1.5 (tunneled:RSVP:1)                                     1100
10.20.1.5/32                                    Remote  OSPF     00h02m20s   10
       10.20.1.5 (tunneled:RSVP:1)                                     100
10.20.1.6/32                                    Remote  OSPF     00h02m20s   10
       10.20.1.5 (tunneled:RSVP:1)                                     1100
-------------------------------------------------------------------------------
No. of Routes: 4
===============================================================================


*A:Dut-B# show router route-table 10.20.1.5/32 next-hop-type tunneled

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix                                     Type    Proto    Age         Pref
       Next Hop[Interface Name]                                        Metric
-------------------------------------------------------------------------------
10.20.1.5/32                                    Remote  OSPF     00h03m55s   10
       10.20.1.5 (tunneled:RSVP:1)                                     100
-------------------------------------------------------------------------------
No. of Routes: 1
===============================================================================
*A:Dut-C# show router route-table protocol tms

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix[Flags]                              Type    Proto    Age         Pref
     Next Hop[Interface Name]                                       Metric
-------------------------------------------------------------------------------
100.0.0.1/32                                    Remote  TMS      00h23m07s   167
vprn1:mda-2-1                                                    0
-------------------------------------------------------------------------------
No. of Routes: 1
Flags: L = LFA nexthop available    B = BGP backup route available
     n = Number of times nexthop is repeated
===============================================================================
*A:Dut-C#
*A:Dut-C# show router route-table summary

===============================================================================
Route Table Summary (Router: Base)
===============================================================================
                                  Active                  Available
-------------------------------------------------------------------------------
     Static                       5                       5
     Direct                       12                      12
     Host                         0                       11
     BGP                          0                       0
```

```
     BGP (Backup)                  0                        0
     VPN Leak                      0                        0
     OSPF                          0                        0
     ISIS                          6                        6
     ISIS (LFA)                    0                        0
     RIP                           0                        0
     LDP                           0                        0
     Aggregate                     0                        0
     Sub Mgmt                      0                        0
     Managed                       0                        0
     NAT                           0                        0
     TMS                           1                        1
-------------------------------------------------------------------------------
     Total                         24                       35
===============================================================================
     NOTE: ISIS LFA routes and BGP Backup routes are not counted towards the total.
```

Summary Route Table Output — Summary output for the route table displays the number of active routes and the number of routes learned by the router by protocol. Total active and available routes are also displayed.

Sample Output

```
A:ALA-A# show router 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                       16                      16
===============================================================================
A:ALA-A#

*A:SRR# show router route-table summary
===============================================================================
Route Table Summary (Router: Base)
===============================================================================
                            Active                   Available
-------------------------------------------------------------------------------
Static                      6                        6
Direct                      1698                     1698
Host                        0                        1477
BGP                         0                        0
BGP (Backup)                0                        0
VPN Leak                    0                        0
OSPF                        0                        0
ISIS                        3296                     6383
ISIS (LFA)                  472                      1499
RIP                         0                        0
```

```
LDP                           6                       6
Aggregate                     0                       0
Sub Mgmt                      0                       0
Managed                       0                       0
NAT                           0                       0
TMS                           0                       0
-------------------------------------------------------------------------------
Total                         5006                    9570
===============================================================================
NOTE: ISIS LFA routes and BGP Backup routes are not counted towards the total.
*A:SRR#
*A:Dut-C>config>router>mpls>lsp# show router route-table 10.0.0.2/32 extensive

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix             : 10.0.0.2/32
  Protocol              : OSPF (1)
  Age                   : 00h02m40s
  Preference            : 150
  Next-Hop              : 1.0.0.3 (RSVP tunnel:94)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 10
    ECMP-Weight         : 20
  Next-Hop              : 1.0.0.3 (RSVP tunnel:61442)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 10
    ECMP-Weight         : 1
-------------------------------------------------------------------------------
No. of Destinations: 1
===============================================================================
*A:Dut-C>config>router>static-route-entry>indirect>tunnel-next-hop# show router route-
table 10.1.0.5/32 extensive

===============================================================================
Route Table (Router: Base)
===============================================================================
Dest Prefix             : 10.1.0.5/32
  Protocol              : STATIC
  Age                   : 00h00m11s
  Preference            : 5
  Next-Hop              : 1.0.0.2 (RSVP tunnel:128)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 1
    ECMP-Weight         : 18
  Next-Hop              : 1.0.0.2 (RSVP tunnel:132)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 1
    ECMP-Weight         : 2
  Next-Hop              : 1.0.0.3 (RSVP tunnel:94)
    QoS                 : Priority=n/c, FC=n/c
```

```
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 1
    ECMP-Weight         : 7
  Next-Hop              : 1.0.0.3 (RSVP tunnel:61442)
    QoS                 : Priority=n/c, FC=n/c
    Source-Class        : 0
    Dest-Class          : 0
    Metric              : 1
    ECMP-Weight         : 2
-------------------------------------------------------------------------------
No. of Destinations: 1
===============================================================================
```

rtr-advertisement

Syntax **rtr-advertisement** [**interface** *interface-name*] [**prefix** *ipv6-prefix[/prefix-length]*]
rtr-advertisement [**conflicts**]

Context show>router

Description This command displays router advertisement information.

If no command line arguments are specified, all routes are displayed, sorted by prefix.

Parameters *interface-name* — Maximum 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:x (eight 16-bit pieces) x:x:x:x:x:x:d.d.d.d x: [0 — FFFF]H d: [0 — 255]D
		prefix-length:	1 — 128

Output **Router-Advertisement Table Output —** The following table describes the output fields for 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.

Label	Description (Continued)
Nbr Advertisement Rx	The number of neighbor advertisements received and time since they were received.
Max Advert Interval	The maximum interval between sending router advertisement messages.
Managed Config	True – Indicates that DHCPv6 has been configured. False – Indicates that DHCPv6 is not available for address configuration.
Reachable Time	The time, in milliseconds, that a node assumes a neighbor is reachable after receiving a reachability confirmation.
Retransmit Time	The time, in milliseconds, between retransmitted neighbor solicitation messages.
Link MTU	The MTU number the nodes use for sending packets on the link.
Rtr Solicitation Rx	The number of router solicitations received and time since they were received.
Nbr Solicitation Rx	The number of neighbor solicitations received and time since they were received.
Min Advert Interval	The minimum interval between sending ICMPv6 neighbor discovery router advertisement messages.
Other Config	True – Indicates there are other stateful configurations. False – Indicates there are no other stateful configurations.
Router Lifetime	Displays the router lifetime in seconds.
Hop Limit	Displays the current hop limit.

Sample Output

```
A:Dut-A# 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
-------------------------------------------------------------------------------
...
A:Dut-A#
```

Output **Router-Advertisement Conflicts Output —** The following table describes the output fields for 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.

Sample Output

```
A:Dut-A# 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
===============================================================================
A:Dut-A#
```

static-arp

Syntax **static-arp** [*ip-addr* | *ip-int-name* | **mac** *ieee-mac-addr*]

Context show>router

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-addr* — Only displays static ARP entries associated with the specified IP address.

ip-int-name — Only displays static ARP entries associated with the specified IP interface name.

mac *ieee-mac-addr* — Only displays static ARP entries associated with the specified MAC address.

Output **Static ARP Table Output —** The following table describes the output fields for the ARP table.

Label	Description
IP Address	The IP address of the static ARP entry.
MAC Address	The MAC address of the static ARP entry.
Age	The age of the ARP entry. Static ARPs always have 00:00:00 for the age.
Type	Inv – The ARP entry is an inactive static ARP entry (invalid).
	Sta – The ARP entry is an active static ARP entry.
Interface	The IP interface name associated with the ARP entry.
No. of ARP Entries	The number of ARP entries displayed in the list.

Sample Output

```
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
12.200.1.1      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 12.200.1.1
===============================================================================
ARP Table
===============================================================================
IP Address      MAC Address       Age      Type Interface
-------------------------------------------------------------------------------
12.200.1.1      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#
```

static-route

Syntax **static-route** [**family**] [[*ip-prefix Imask*] | [**preference** *preference*] | [**next-hop** *ip-address*] | **tag** *tag*]

Context show>router

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 —** Specify 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.

ip-prefix /mask — 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 — 32
ipv6-prefix:	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
ipv6-prefix-length:	0 — 128

preference *preference* — Only displays static routes with the specified route preference.

Values 0 — 65535

next-hop *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:x (eight 16-bit pieces) x:x:x:x:x:x:d.d.d.d x: [0 — FFFF]H d: [0 — 255]D

tag *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 — 4294967295

Output **Static Route Output —** The following table describes the output fields for the static route table.

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 nexthop for this type of route is either the next hop IP address or an egress IP interface name.
Next Hop	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. Indicates there is no current egress interface because the static route is inactive or a black hole 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 Nexthop for this type of route is either the next hop IP address or an egress IP interface name.
Next Hop	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.

Sample Output

```
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#
*A:sim1# show router static-route 10.10.0.0/16 detail
===============================================================================
Static Route Table (Router: Base)            Family : [IPv4|MCast-IPv4|IPv6]
===============================================================================
Network : 3FFD:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFE3/120  Type : [Nexthop|Indirect|Black-
hole]
Nexthop : [address | LSP label & name]                 Nexthop type: [IP|LDP|RSVP-TE]
Interface :
Metric  : 1                                        Prefence :  5
Active  : [Y|N]                                    Admin State : [Up|Down]
Tag :
BFD: [enable|disabled]

CPE-check: [enabled|disabled]                      State: [Up|Down]
Target   : <address>
Interval : [value | n/a]                           Drop Count : <value>
Log      : [Y|N]
CPE Host Up/Dn Time : 0d 16:32:28
CPE Echo Req Tx      : 0                           CPE Echo Reply Rx: 0
CPE Up Transitions  : 0                            CPE Down Transitions : 0
CPE TTL : 13
===============================================================================
A:sim1#

*A:CPM133>config>router# show router static-route 3.3.3.3/32 detail

===============================================================================
Static Route Table (Router: Base)  Family: IPv4
===============================================================================
Prefix           : 3.3.3.3/32
Nexthop          : n/a
Type             : Blackhole                       Nexthop Type      : IP
Interface        : n/a                             Active            : Y
Prefix List      : n/a                             Prefix List Type  : n/a
Metric           : 1                               Preference        : 5
Admin  State     : Up                              Tag               : 0
BFD              : disabled                        Community         : 100:33
CPE-check        : disabled
```

```
-------------------------------------------------------------------------------
No. of Static Routes: 1

===============================================================================
*A:Dut-C> show router static-route  10.1.0.5/32 detail

===============================================================================
Static Route Table (Router: Base)  Family: IPv4
===============================================================================
Prefix           : 10.1.0.5/32
Nexthop          : 1.0.0.2
Indirect         : Type
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: filter                           Disallow-IGP      : disabled
RSVP-TE Tunnels  : enabled                          LDP Tunnels       : disabled
-------------------------------------------------------------------------------
No. of Static Routes: 1

===============================================================================
```

service-prefix

Syntax **service-prefix**

Description This command displays the address ranges reserved by this node for services sorted by prefix.

Output **Service Prefix Output —** The following table describes the output fields for service prefix information.

Label	Description
IP Prefix	The IP prefix of the range of addresses included in the range for services.
Mask	The subnet mask length associated with the IP prefix.
Exclusive	false — Addresses in the range are not exclusively for use for service IP addresses. true — Addresses in the range are exclusively for use for service IP addresses and cannot be assigned to network IP interfaces.

Sample Output

```
A:ALA-A# show router service-prefix
===============================================
```

```
Address Ranges reserved for Services
================================================
IP Prefix                Mask      Exclusive
------------------------------------------------
172.16.1.0               24        true
172.16.2.0               24        false
================================================
A:ALA-A#
```

sgt-qos

Syntax **sgt-qos**

Context show>router

Description This command displays self-generated traffic QoS related information.

application

Syntax **application** [*app-name*] [**dscp|dot1p**]

Context show>router>sgt-qos

Description This command displays application QoS settings.

Parameters *app-name* — The specific application.

Values arp, bgp, cflowd, dhcp, dns, ftp, icmp, igmp, isis, ldp, mld, msdp, ndis, ntp, ospf, pimradius, rip, rsvpsnmp, snmp-notification, srrp, ssh, syslog, tacplus, telnet, tftp, traceroute, vrrp, pppoe

dscp-map

Syntax **dscp-map** [*dscp-name*]

Context show>router>sgt-qos

Description This command displays DSCP to FC mappings.

Parameters *dscp-name* — The specific 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

status

Syntax **status**

Context show>router

Description This command displays the router status.

Output **Router Status Output —** The following table describes the output fields for router status information.

Label	Description
Router	The administrative and operational states for the router.
OSPF	The administrative and operational states for the OSPF protocol.
RIP	The administrative and operational states for the RIP protocol.
ISIS	The administrative and operational states for the IS-IS protocol.
MPLS	The administrative and operational states for the MPLS protocol.
RSVP	The administrative and operational states for the RSVP protocol.
LDP	The administrative and operational states for the LDP protocol.
BGP	The administrative and operational states for the BGP protocol.
IGMP	The administrative and operational states for the IGMP protocol.
MLD	The administrative and operational states for the MLD protocol.
PIM	The administrative and operational states for the PIM protocol.
PIMv4	The administrative and operational states for the PIMv4 protocol..
PIMv6	The administrative and operational states for the PIMv6 protocol..
OSPFv3	The administrative and operational states for the OSPFv3 protocol.
MSDP	The administrative and operational states for the HSDP protocol
Max Routes	The maximum number of routes configured for the system.
Total Routes	The total number of routes in the route table.
ECMP Max Routes	The number of ECMP routes configured for path sharing.
service-id	state – Current single SFM state start – Last time this vRtr went into overload, after having respected the hold-off time interval – How long the vRtr remained or is in overload

Label	Description (Continued)
ICMP Tunneling	No — ICMP tunneling is disabled. Yes — TICMP tunneling is enabled.
VPRN Local TTL Propagate	inherit — VPRN instance is to inherit the global configuration none — TTL of IP packet is not propagated into the VC or transport label stack vc-only — TTL of the IP packet is propagated into the VC label and not into the labels in the transport label stack al — TTL of the IP packet is propagated into the VC label and all labels in the transport label stack
VPRN Transit TTL Propag*	inherit — VPRN instance is to inherit the global configuration none — TTL of IP packet is not propagated into the VC or transport label stack vc-only — TTL of the IP packet is propagated into the VC label and not into the labels in the transport label stack al — TTL of the IP packet is propagated into the VC label and all labels in the transport label stack
Label Route Local TTL P*	all — TTL of the IP packet is propagated into all labels of the transport label stack none — TTL of the IP packet is not propagated into the transport label stack
Label Route Transit TTL*	all — TTL of the IP packet is propagated into all labels of the transport label stack none — TTL of the IP packet is not propagated into the transport label stack
LSR Label Route TTL Pro*	all — TTL of the swapped label is propagated into all labels of the transport label stack none — TTL of the swapped label is not propagated into the transport label stack
Triggered Policies	No — Triggered route policy re-evaluation is disabled. Yes — Triggered route policy re-evaluation is enabled.

Sample Output

Note that there are multiple instances of OSPF. OSPF-0 is persistent. OSPF-1 through OSPF-31 are present when that particular OSPF instance is configured.

```
*A:Performance# show router status
===============================================================
Router Status (Router: Base)
===============================================================
                          Admin State         Oper State
---------------------------------------------------------------
Router                    Up                  Up
OSPFv2-0                  Up                  Up
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         244285
Total IPv6 Routes         0
Max Multicast Routes      No Limit
Total Multicast Routes    PIM not configured
ECMP Max Routes           1
Triggered Policies        No
===============================================================
*A:Performance#

*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#
```

Sample Output

The folowing show command outputs show TTL propagation and ICMP tunneling configurations, first in base router and then in a VPRN service.

```
*A:Performance# show router status
===============================================================
Router Status (Router: Base)
===============================================================
                          Admin State         Oper State
---------------------------------------------------------------
Router                    Up                  Up
OSPFv2-0                  Up                  Up
OSPFv2-2                  Down                                Down
RIP                       Not configured                      Not configured
RIP-NG                    Not configured                      Not configured
ISIS-0                    Up                                  Up
ISIS-1024                 Down                                Down
MPLS                      Down                                Down
RSVP                      Down                                Down
LDP                       Up                                  Down
BGP                       Up                                  Down
IGMP
MLD
PIM
PIMv4
PIMv6
OSPFv3
MSDP

Max IPv4 Routes           No Limit
```

```
Max IPv6 Routes          No Limit
Total IPv4 Routes        0
Total IPv6 Routes        0
Max Multicast Routes     No Limit
Total IPv4 Mcast Routes  PIM not configured
Total IPv6 Mcast Routes  PIM not configured
ECMP Max Routes          1
Mcast Info Policy        default
Triggered Policies       No
LDP Shortcut             Disabled
Single SFM Overload      Disabled
IP Fast Reroute          Disabled
ICMP Tunneling           Disabled
Reassembly ISA-BB group  Not configured
ICMP Tunneling           Disabled
Ipv6 Nbr Reachab. time   Not configured                  30
IPv6 Nbr stale time (s)  14400
VPRN Local TTL Propagate vc-only
VPRN Transit TTL Propag* vc-only
Label Route Local TTL P* none
Label Route Transit TTL* none
LSR Label Route TTL Pro* none
===============================================================================
* indicates that the corresponding row element may have been truncated.
*B:bkvm31#
```

The folowing is output of the show command for the TTL propagation and ICMP tunneling configurations in a VPRN service. The ttl-propagation has been specified as local and all for VPRN service 5001.

```
*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#
```

tms

Syntax **tms routes**

Context show>router *router-instance*

Description This command displays Threat Management Services related information. The router instance must be specified.

Sample Output

```
show router <router-instance> tms routes
-----------------------------------------
*A:Dut-C# show router 1 tms routes

===============================================================================
TMS Routes (IPv4)
===============================================================================
Status    Network                                   Next Hop[Interface Name]
-------------------------------------------------------------------------------
Active    100.0.0.1/32                              mda-2-1
Inactive  101.0.0.1/32                              mda-2-1
Inactive  102.0.0.1/32                              mda-2-1
Inactive  103.0.0.1/32                              mda-2-1
Inactive  104.0.0.1/32                              mda-2-1
Inactive  105.0.0.1/32                              mda-2-1
Inactive  106.0.0.1/32                              mda-2-1
Inactive  107.0.0.1/32                              mda-2-1
Inactive  108.0.0.1/32                              mda-2-1
Inactive  109.0.0.1/32                              mda-2-1
-------------------------------------------------------------------------------
No. of Routes: 10
===============================================================================
*A:Dut-C# show router 1 tms routes
```

```
===============================================================================
TMS Routes (IPv4)
===============================================================================
Status    Network                                   Next Hop[Interface Name]
-------------------------------------------------------------------------------
Active    100.0.0.1/32                              mda-2-1
-------------------------------------------------------------------------------
No. of Routes: 1
===============================================================================
```

tunnel-table

Syntax **tunnel-table** [*ip-address*[*/mask*]] [**protocol** *protocol* | **sdp** *sdp-id*] [**summary**]

Context show>router

Description This command displays tunnel table information. Note that auto-bind GRE tunnels are not displayed in **show** command output. GRE tunnels are not the same as SDP tunnels that use the GRE encapsulation type. When the **auto-bind** command is used when configuring a VPRN service, it means the MP-BGP NH resolution is refering to the 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 *ip-address*[*/mask*] — Displays the specified tunnel table's destination IP address and mask.

protocol *protocol* — Dislays LDP protocol information.

sdp *sdp-id* — Displays information pertaining to the specified SDP.

summary — Displays summary tunnel table information.

Output **Tunnel Table Output —** The following table describes tunnel table output fields.

Label	Description
Destination	The route's destination address and mask.
Owner	Specifies the tunnel owner.
Encap	Specifies the tunnel's encapsulation type.
Tunnel ID	Specifies the tunnel (SDP) identifier.
Pref	Specifies the route preference for routes learned from the configured peer(s).
Nexthop	The next hop for the route's destination.
Metric	The route metric value for the route.
CBF Classes	The forwarding classes and/or **default-lsp** option assigned to this tunnel

Sample Output

```
*A:Dut-D>config>service>vpls# show router tunnel-table sdp 17407
===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination        Owner Encap TunnelId  Pref     Nexthop        Metric
-------------------------------------------------------------------------------
127.0.68.0/32      sdp   MPLS  17407     5        127.0.68.0     0
===============================================================================
*A:Dut-D# show service id 1 sdp 17407:4294967294 detail
===============================================================================
Service Destination Point (Sdp Id : 17407:4294967294) Details
===============================================================================
-------------------------------------------------------------------------------
 Sdp Id 17407:4294967294  -(not applicable)
-------------------------------------------------------------------------------
Description     : (Not Specified)
SDP Id             : 17407:4294967294         Type              : VplsPmsi
Split Horiz Grp    : (Not Specified)
VC Type            : Ether                    VC Tag            : n/a
Admin Path MTU     : 9194                     Oper Path MTU     : 9194
Delivery           : MPLS
Far End            : not applicable
Tunnel Far End     : n/a                      LSP Types         : None
Hash Label         : Disabled                 Hash Lbl Sig Cap  : Disabled
Oper Hash Label    : Disabled

Admin State        : Up                       Oper State        : Up
Acct. Pol          : None                     Collect Stats     : Disabled
Ingress Label      : 0                        Egress Label      : 3
Ingr Mac Fltr-Id   : n/a                      Egr Mac Fltr-Id   : n/a
Ingr IP Fltr-Id    : n/a                      Egr IP Fltr-Id    : n/a
Ingr IPv6 Fltr-Id  : n/a                      Egr IPv6 Fltr-Id  : n/a
Admin ControlWord  : Not Preferred            Oper ControlWord  : False
Last Status Change : 12/14/2012 12:42:22      Signaling         : None
Last Mgmt Change   : 12/14/2012 12:42:19      Force Vlan-Vc     : Disabled
Endpoint           : N/A                      Precedence        : 4
PW Status Sig      : Enabled
Class Fwding State : Down
Flags              : None
Time to RetryReset : never                    Retries Left      : 3
Mac Move           : Blockable                Blockable Level   : Tertiary
Local Pw Bits      : None
Peer Pw Bits       : None
Peer Fault Ip      : None
Peer Vccv CV Bits  : None
Peer Vccv CC Bits  : None
Application Profile: None
Max Nbr of MAC Addr: No Limit                 Total MAC Addr    : 0
Learned MAC Addr   : 0                        Static MAC Addr   : 0

MAC Learning       : Enabled                  Discard Unkwn Srce: Disabled
MAC Aging          : Enabled
BPDU Translation   : Disabled
L2PT Termination   : Disabled
MAC Pinning        : Disabled
Ignore Standby Sig : False                    Block On Mesh Fail: False
Oper Group         : (none)                   Monitor Oper Grp  : (none)
```

```
Rest Prot Src Mac  : Disabled
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 Bridge  : N/A                        Designated Port Id: N/A

Fwd Transitions    : 0                          Bad BPDUs rcvd    : 0
Cfg BPDUs rcvd     : 0                          Cfg BPDUs tx      : 0
TCN BPDUs rcvd     : 0                          TCN BPDUs tx      : 0
TC bit BPDUs rcvd  : 0                          TC bit BPDUs tx   : 0
RST BPDUs rcvd     : 0                          RST BPDUs tx      : 0
-------------------------------------------------------------------------------
Number of SDPs : 1
-------------------------------------------------------------------------------
===============================================================================


*A:Dut-C# show router tunnel-table sdp 17407
===============================================================================
Tunnel Table (Router: Base)

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

Destination        Owner Encap TunnelId  Pref     Nexthop        Metric

-------------------------------------------------------------------------------

127.0.68.0/32      sdp   MPLS  17407     5        127.0.68.0     0

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


A:ALA-A>config>service# show router tunnel-table
===============================================================================
Tunnel Table ==================================================================
DestinationOwnerEncapTunnel IdPrefNexthopMetric
-------------------------------------------------------------------------------
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-A>config>service#


A:ALA-A>config>service#  show router tunnel-table summary
===============================================================================
Tunnel Table Summary (Router: Base)
===============================================================================
                              Active                  Available
-------------------------------------------------------------------------------
LDP                           1                       1
SDP                           1                       1
===============================================================================
A:ALA-A>config>service#

A:Dut-C# show router tunnel-table
```

```
===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination       Owner     Encap TunnelId  Pref     Nexthop        Metric
-------------------------------------------------------------------------------
4.0.0.1/32        isis (0)  MPLS  524309    11       1.3.4.4        10
10.20.1.2/32      isis (0)  MPLS  524312    11       1.2.3.2        10
10.20.1.4/32      isis (0)  MPLS  524310    11       1.3.4.4        10
10.20.1.5/32      isis (0)  MPLS  524311    11       1.2.3.2        20
-------------------------------------------------------------------------------
Flags: B = BGP backup route available
       E = inactive best-external BGP route
===============================================================================
A:Dut-C#
```

```
A:Dut-C# show router tunnel-table detail

===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination      : 7.1.126.2/32
NextHop          : 110.20.1.5
Tunnel Flags     : is-over-tunnel
Age              : 01h27m59s
CBF Classes      : (Not Specified)
Owner            : ldp                 Encap            : MPLS
Tunnel ID        : 66389               Preference       : 9
Tunnel Label     : 243909              Tunnel Metric    : 1
Tunnel MTU       : 9186
-------------------------------------------------------------------------------


-------------------------------------------------------------------------------
Destination      : 10.20.1.22/32
NextHop          : 120.1.17.7
Tunnel Flags     : (Not Specified)
Age              : 01h29m15s
CBF Classes      : (Not Specified)
Owner            : rsvp                Encap            : MPLS
Tunnel ID        : 13                  Preference       : 7
Tunnel Label     : 249809              Tunnel Metric    : 2000
Tunnel MTU       : 9190
LSP ID           : 44032               Bypass Label     : 0
LSP Bandwidth    : 0                   LSP Weight       : 0
-------------------------------------------------------------------------------
Destination      : 10.20.1.22/32
NextHop          : 120.1.18.7
Tunnel Flags     : exclude-for-lfa
Age              : 00h01m47s
CBF Classes      : default-lsp
Owner            : rsvp                Encap            : MPLS
Tunnel ID        : 243                 Preference       : 7
Tunnel Label     : 249872              Tunnel Metric    : 2000
Tunnel MTU       : 9190
LSP ID           : 44032               Bypass Label     : 0
LSP Bandwidth    : 0                   LSP Weight       : 0
-------------------------------------------------------------------------------
```

```
Destination      : 10.20.1.22/32
NextHop          : 120.1.18.7
Tunnel Flags     : exclude-for-lfa
Age              : 00h00m38s
CBF Classes      : af l1 ef nc
Owner            : rsvp                  Encap            : MPLS
Tunnel ID        : 244                   Preference       : 7
Tunnel Label     : 249905                Tunnel Metric    : 2000
Tunnel MTU       : 9190
LSP ID           : 45568                 Bypass Label     : 0
LSP Bandwidth    : 0                     LSP Weight       : 0
-------------------------------------------------------------------------------
Destination      : 10.20.1.22/32
NextHop          : 120.1.17.7
Tunnel Flags     : exclude-for-lfa
Age              : 00h00m21s
CBF Classes      : h2
Owner            : rsvp                  Encap            : MPLS
Tunnel ID        : 245                   Preference       : 7
Tunnel Label     : 250063                Tunnel Metric    : 2000
Tunnel MTU       : 9190
LSP ID           : 39936                 Bypass Label     : 0
LSP Bandwidth    : 0                     LSP Weight       : 0
-------------------------------------------------------------------------------
Destination      : 10.20.1.22/32
NextHop          : 120.1.18.7
Tunnel Flags     : exclude-for-lfa
Age              : 01h29m40s
CBF Classes      : ef default-lsp
Owner            : rsvp                  Encap            : MPLS
Tunnel ID        : 246                   Preference       : 7
Tunnel Label     : 250024                Tunnel Metric    : 2000
Tunnel MTU       : 9190
LSP ID           : 38400                 Bypass Label     : 0
LSP Bandwidth    : 0                     LSP Weight       : 0
-------------------------------------------------------------------------------


-------------------------------------------------------------------------------
Destination      : 211.1.0.254/32
NextHop          : 110.20.1.4
Tunnel Flags     : is-over-tunnel
Age              : 01h28m38s
CBF Classes      : (Not Specified)
Owner            : bgp                   Encap            : MPLS
Tunnel ID        : 264115                Preference       : 12
Tunnel Label     : 260512                Tunnel Metric    : 1000
Tunnel MTU       : 9186
-------------------------------------------------------------------------------
Number of tunnel-table entries          : 2866
Number of tunnel-table entries with LFA : 0
===============================================================================

A:Dut-C#
```

L2TP Show Commands

l2tp

Syntax **l2tp**

Context show>router

Description This command enables the context to display L2TP related information.

group

Syntax **group** [*tunnel-group-name* [**statistics**]]

Context show>router>l2tp

Description This command displays L2TP group operational information.

Parameters *tunnel-group-name* — Displays information for the specified tunnel group.

statistics — Displays statistics for the specified tunnel group.

Sample Output

```
*A:Dut-C# show router l2tp group
===============================================================================
L2TP Groups
===============================================================================
Group Name       Ses Limit Ses Assign    State  Tun Active Ses Active
                                                    Tun Total  Ses Total
-------------------------------------------------------------------------------
isp1.group-1
                       131071    existingFirst active     1          1
                                                          1          1
isp1.group-2
                       131071    weighted      active     2          5
                                                          3          8
-------------------------------------------------------------------------------
No. of L2TP Groups: 2
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp group isp1.group-2
===============================================================================
Group Name: isp1.group-2
===============================================================================
Conn ID                      Loc-Tu-ID Rem-Tu-ID State              Ses Active
  Group                                                            Ses Total
    Assignment
-------------------------------------------------------------------------------
```

```
143523840                     2190      17525     established         2
  isp1.group-2                                                      3
    isp1.tunnel-3
236912640                     3615      58919     closedByPeer        0
  isp1.group-2                                                      2
    isp1.tunnel-2
658178048                     10043     33762     draining            3
  isp1.group-2                                                      3
    isp1.tunnel-2
-------------------------------------------------------------------------------
No. of tunnels: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp group isp1.group-2 statistics
Group Name: isp1.group-2
-------------------------------------------------------------------------------
              Attempts   Failed     Failed-Aut            Active     Total
-------------------------------------------------------------------------------
Tunnels       3          0          0                     2          3
Sessions      8          0          N/A                   5          8
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
              Pkt-Ctl               Pkt-Err               Octets
-------------------------------------------------------------------------------
Rx            51                    0                     1224
Tx            51                    0                     2796
-------------------------------------------------------------------------------
*A:Dut-C#
```

peer

Syntax **peer** *ip-address*
peer *ip-address* **statistics**
peer [**draining**] [**unreachable**]

Context show>router>l2tp

Description This command displays L2TP peer operational information.

Parameters *ip-address* — Display information for the specified IP address of the peer.

draining — Displays peer objects set to **drain**.

unreachable — Displays peers that are deemed unreachable.

statistics — Displays the statistics for the given IP address.

Sample Output

```
*A:Dut-C# show router l2tp peer
===============================================================================
L2TP Peers
```

```
===============================================================================
Peer IP                                                 Tun Active Ses Active
                                      Drain Unreach Role Tun Total  Ses Total
-------------------------------------------------------------------------------
10.10.14.8                                               1          1
                                                    LAC  1          1
10.10.20.100                                             1          3
                                      drain         LAC  2          5
10.10.20.101                                             0          0
                                           unreach LAC  1          1
-------------------------------------------------------------------------------
No. of peers: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp peer unreachable
===============================================================================
L2TP Peers
===============================================================================
Peer IP                                                 Tun Active Ses Active
                                      Drain Unreach Role Tun Total  Ses Total
-------------------------------------------------------------------------------
10.10.20.101                                             0          0
                                           unreach LAC  1          1
-------------------------------------------------------------------------------
No. of peers: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp peer 10.10.20.101
===============================================================================
Peer IP: 10.10.20.101
===============================================================================
Role              : LAC                 Draining          : false
Tunnels           : 1                   Tunnels Active    : 0
Sessions          : 1                   Sessions Active   : 0
Unreachable       : true                Time Unreachable  : 04/17/2009 19:34:04
===============================================================================
Conn ID                       Loc-Tu-ID Rem-Tu-ID State              Ses Active
  Group                                                              Ses Total
    Assignment
-------------------------------------------------------------------------------
18284544                      279       0         closed             0
  isp1.group-2                                                       1
    isp1.tunnel-3
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp peer draining
===============================================================================
L2TP Peers
===============================================================================
Peer IP                                                 Tun Active Ses Active
                                      Drain Unreach Role Tun Total  Ses Total
```

```
-------------------------------------------------------------------------------
10.10.20.100                                            1          3
                                      drain         LAC  2          5
-------------------------------------------------------------------------------
No. of peers: 1
===============================================================================
*A:Dut-C#

*A:Fden-Dut2-BSA2# show router l2tp peer 10.0.0.1 statistics

===============================================================================
Peer IP: 10.0.0.1
===============================================================================
tunnels                                                 : 1
tunnels active                                          : 1
sessions                                                : 1
sessions active                                         : 1

rx ctrl octets                                          : 541
rx ctrl packets                                         : 5
tx ctrl octets                                          : 272
tx ctrl packets                                         : 5
tx error packets                                        : 0
rx error packets                                        : 0
rx accepted msg                                         : 4
rx duplicate msg                                        : 0
rx out of window msg                                    : 0

acceptedMsgType
  StartControlConnectionRequest                         : 1
  StartControlConnectionConnected                       : 1
  IncomingCallRequest                                   : 1
  IncomingCallConnected                                 : 1
  ZeroLengthBody                                        : 1
originalTransmittedMsgType
  StartControlConnectionReply                           : 1
  IncomingCallReply                                     : 1
  ZeroLengthBody                                        : 3

last cleared time                                       : N/A
===============================================================================
```

session

Syntax **session connection-id** *connection-id* [**detail**]|

session [**detail**] [**session-id** *session-id* (v2)] [**state** *session-state*][**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name***local-host-name*] [**remote-name** *remote-host-name*] [**tunnel-id** *tunnel-id (v2)*]|

session [**detail**] [**state** *session-state*] [**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *local-host-name*] [**remote-name** *remote-host-name*] [**control-connection-id** *connection-id (v3*)]

Context show>router>l2tp

Description This command displays L2TP session operational information.

Parameters **connection-id** *connection-id* — Specifies the identification number for a Layer Two Tunneling Protocol connection.

Values 1 — 429496729

detail — Displays detailed L2TP session information.

session-id *session-id* (v2) — Specifies the identification number for a Layer Two Tunneling Protocol session.

Values 1 — 65535

state *session-state* — Specifies the values to identify the operational state of the L2TP session.

Values closed, closed-by-peer, established, idle, wait-reply, wait-tunnel

peer *ip-address* — Specifies the IP address of the peer.

Values		
	ipv4-address	a.b.c.d (host bits must be 0)
	ipv6-address	x:x:x:x:x:x:x:x[-interface] x:x:x:x:x:x:d.d.d.d[-interface] x: [0..FFFF]H d: [0..255]D interface: 32 characters maximum, mandatory for link local addresses

group *group-name* — Specifies a string to identify a Layer Two Tunneling Protocol Tunnel group.

assignment-id *assignment-id* — Specifies a string that distinguishes this Layer Two Tunneling Protocol tunnel.

local-name *local-host-name* — Specifies the host name used by this system during the authentication phase of tunnel establishment.

remote-name *remote-host-name* — Specifies a string that is compared to the host name used by the tunnel peer during the authentication phase of tunnel establishment.

tunnel-id *tunnel-id (v2)* — Specifies the local identifier of this Layer Two Tunneling Protocol tunnel, when L2TP version 2 is used.

Values 1 — 65535

control-connection-id *connection-id (v3*) — Specifies an identification number for a Layer Two Tunneling Protocol session.

Values 1 — 429496729

Sample Output

```
*A:Dut-C# show router l2tp session
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
143524786           143523840           2190        946         established
143526923           143523840           2190        3083        established
143531662           143523840           2190        7822        closed
```

```
236926987           236912640           3615        14347       closed
236927915           236912640           3615        15275       closed
379407426           379387904           5789        19522       established
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 9
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session state established
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
143524786           143523840           2190        946         established
143526923           143523840           2190        3083        established
379407426           379387904           5789        19522       established
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 6
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session state closed detail
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 143531662
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-3
Error Message : Terminated by PPPoE: RX PADT

Control Conn ID   : 143523840           Remote Conn ID    : 1148557524
Tunnel ID         : 2190                Remote Tunnel ID  : 17525
Session ID        : 7822                Remote Session ID : 39124
Time Started      : 04/17/2009 18:44:37
Time Established  : 04/17/2009 18:44:37 Time Closed       : 04/17/2009 18:44:50
CDN Result        : generalError        General Error     : noError
-------------------------------------------------------------------------------
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 236926987
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-2
Error Message : tunnel was closed

Control Conn ID   : 236912640           Remote Conn ID    : 3861360381
Tunnel ID         : 3615                Remote Tunnel ID  : 58919
Session ID        : 14347               Remote Session ID : 44797
```

```
Time Started      : 04/17/2009 18:41:55
Time Established  : 04/17/2009 18:41:55 Time Closed       : 04/17/2009 18:43:20
CDN Result        : generalError        General Error     : noError
-------------------------------------------------------------------------------
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 236927915
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-2
Error Message : tunnel was closed

Control Conn ID   : 236912640           Remote Conn ID    : 3861317210
Tunnel ID         : 3615                Remote Tunnel ID  : 58919
Session ID        : 15275               Remote Session ID : 1626
Time Started      : 04/17/2009 18:41:03
Time Established  : 04/17/2009 18:41:03 Time Closed       : 04/17/2009 18:43:20
CDN Result        : generalError        General Error     : noError
-------------------------------------------------------------------------------
No. of sessions: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session session-id 946
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
143524786           143523840           2190        946         established
-------------------------------------------------------------------------------
No. of sessions: 1
===============================================================================
*A:Dut-C# show router l2tp session connection-id 143524786 detail
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 143524786
State         : established
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-3
Error Message : N/A

Control Conn ID   : 143523840           Remote Conn ID    : 1148528691
Tunnel ID         : 2190                Remote Tunnel ID  : 17525
Session ID        : 946                 Remote Session ID : 10291
Time Started      : 04/17/2009 18:42:01
Time Established  : 04/17/2009 18:42:01 Time Closed       : N/A
CDN Result        : noError             General Error     : noError
-------------------------------------------------------------------------------
*A:Dut-C#


*A:Dut-C# show router l2tp session group isp1.group-2
===============================================================================
L2TP Session Summary
===============================================================================
```

```
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
143524786           143523840           2190        946         established
143526923           143523840           2190        3083        established
143531662           143523840           2190        7822        closed
236926987           236912640           3615        14347       closed
236927915           236912640           3615        15275       closed
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 8
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session tunnel-id 2190 state closed detail
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 143531662
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-3
Error Message : Terminated by PPPoE: RX PADT

Control Conn ID   : 143523840           Remote Conn ID    : 1148557524
Tunnel ID         : 2190                Remote Tunnel ID  : 17525
Session ID        : 7822                Remote Session ID : 39124
Time Started      : 04/17/2009 18:44:37
Time Established  : 04/17/2009 18:44:37 Time Closed       : 04/17/2009 18:44:50
CDN Result        : generalError        General Error     : noError
-------------------------------------------------------------------------------
No. of sessions: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session assignment-id isp1.tunnel-2
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
236926987           236912640           3615        14347       closed
236927915           236912640           3615        15275       closed
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 5
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session assignment-id isp1.tunnel-2 state established
===============================================================================
L2TP Session Summary
===============================================================================
```

```
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session control-connection-id 658178048
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session peer 10.10.20.100
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
236926987           236912640           3615        14347       closed
236927915           236912640           3615        15275       closed
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 5
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session peer 10.10.20.100 state closed detail
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 236926987
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-2
Error Message : tunnel was closed

Control Conn ID   : 236912640           Remote Conn ID    : 3861360381
Tunnel ID         : 3615                Remote Tunnel ID  : 58919
Session ID        : 14347               Remote Session ID : 44797
Time Started      : 04/17/2009 18:41:55
Time Established  : 04/17/2009 18:41:55 Time Closed       : 04/17/2009 18:43:20
CDN Result        : generalError        General Error     : noError
```

```
-------------------------------------------------------------------------------
===============================================================================
L2TP Session Status
===============================================================================
Connection ID : 236927915
State         : closed
Tunnel Group  : isp1.group-2
Assignment ID : isp1.tunnel-2
Error Message : tunnel was closed

Control Conn ID   : 236912640           Remote Conn ID    : 3861317210
Tunnel ID         : 3615                Remote Tunnel ID  : 58919
Session ID        : 15275               Remote Session ID : 1626
Time Started      : 04/17/2009 18:41:03
Time Established  : 04/17/2009 18:41:03 Time Closed       : 04/17/2009 18:43:20
CDN Result        : generalError        General Error     : noError
-------------------------------------------------------------------------------
No. of sessions: 2
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session local-name lac1.wholesaler.com
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
143524786           143523840           2190        946         established
143526923           143523840           2190        3083        established
143531662           143523840           2190        7822        closed
236926987           236912640           3615        14347       closed
236927915           236912640           3615        15275       closed
379407426           379387904           5789        19522       established
658187773           658178048           10043       9725        established
658198275           658178048           10043       20227       established
658210606           658178048           10043       32558       established
-------------------------------------------------------------------------------
No. of sessions: 9
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp session local-name lac1.wholesaler.com remote-name
lns.retailer1.net
===============================================================================
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
379407426           379387904           5789        19522       established
-------------------------------------------------------------------------------
No. of sessions: 1
===============================================================================
*A:Dut-C#


*A:Fden-Dut2-BSA2# show router l2tp session connection-id 600407016
===============================================================================
```

```
L2TP Session Summary
===============================================================================
ID                  Control Conn ID     Tunnel-ID   Session-ID  State
-------------------------------------------------------------------------------
600407016           600375296           9161        31720       established
  simon@base.lac.base.lns
  interface: gi_base_lns_base_lac
  service-id: 100
  ip-address: 10.100.2.1
===============================================================================


*A:Fden-Dut2-BSA2# show router l2tp session connection-id 600407016 detail
===============================================================================
L2TP Session Status
===============================================================================

Connection ID: 600407016
State        : established
Tunnel Group : base_lns_base_lac
Assignment ID: t1
Error Message: N/A

Control Conn ID   : 600375296           Remote Conn ID    : 1026712216
Tunnel ID         : 9161                Remote Tunnel ID  : 15666
Session ID        : 31720               Remote Session ID : 25240
Time Started      : 02/02/2010 09:08:54
Time Established  : 02/02/2010 09:08:54 Time Closed       : N/A
CDN Result        : noError             General Error     : noError
-------------------------------------------------------------------------------

PPP information

Service Id           : 100
Interface            : gi_base_lns_base_lac
LCP State            : opened
IPCP State           : opened
IPv6CP State         : initial
PPP MTU              : 1492
PPP Auth-Protocol    : chap
PPP User-Name        : simon@base.lac.base.lns

Subscriber Origin    : radius
Strings Origin       : radius
IPCP Info Origin     : radius
IPv6CP Info Origin   : none

Subscriber           : "simon"
Sub-Profile-String   : "sub1"
SLA-Profile-String   : "sla1"
ANCP-String          : ""
Int-Dest-Id          : ""
App-Profile-String   : ""
Category-Map-Name    : ""

IP Address           : 10.100.2.1
Primary DNS          : N/A
Secondary DNS        : N/A
Primary NBNS         : N/A
```

```
Secondary NBNS       : N/A
Address-Pool         : N/A

IPv6 Prefix          : N/A
IPv6 Del.Pfx.        : N/A
Primary IPv6 DNS     : N/A
Secondary IPv6 DNS   : N/A

Circuit-Id           : (Not Specified)
Remote-Id            : (Not Specified)

Session-Timeout      : N/A
Radius Class         : (Not Specified)
Radius User-Name     : simon@base.lac.base.lns
```

statistics

Syntax **statistics**

Context show>router>l2tp

Description This command displays L2TP statistics.

Sample Output

```
*A:Dut-C# show router l2tp statistics
===============================================================================
L2TP Statistics
===============================================================================
Tunnels                                 Sessions
-------------------------------------------------------------------------------
Active             : 3                  Active             : 6

Setup history since 04/17/2009 18:38:41

Total              : 4                  Total              : 9
Failed             : 0                  Failed             : 0
Failed Auth        : 0
===============================================================================
*A:Dut-C#
```

tunnel

Syntax **tunnel** [**statistics**] [**detail**] [**peer** *ip-address*] [**state** *tunnel-state*] [**remote-connection-id** *remote-connection-id (v3)*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *host-name*] [**remote-name** *host-name*]|

tunnel [**statistics**] [**detail**] [**peer** *ip-address*] [**state** *tunnel-state*] [**remote-tunnel-id** *remote-tunnel-id (v2)*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *host-name*] [**remote-name** *host-name*]

tunnel tunnel-id *tunnel-id (v2)* [**statistics**] [**detail**]

tunnel connection-id *connection-id (v3)* [**statistics**] [**detail**]

Context show>router>l2tp

Description This command displays L2TP tunnel operational information.

Parameters **statistics** — Displays L2TP tunnel statistics.

detail — Displays detailed L2TP tunnel information.

peer ***i****p-address* — Displays information for the the IP address of the peer.

state *tunnel-state* — Displays the operational state of the tunnel.

remote-connection-id *remote-connection-id (v3)* — Displays information for the specified remote connection ID.

group *group-name* — Displays L2TP tunnel information for the specified tunnel group.

assignment-id *assignment-id* — Specifies a string that distinguishes this Layer Two Tunneling Protocol tunnel.

local-name *host-name* — Specifies a local host name used by this system.

remote-name *host-name* — Specifies a remote host name used by this system.

connection-id *connection-id* — Specifies the identification number for a Layer Two Tunneling Protocol connection.

Values 1 — 429496729

detail — Displays detailed L2TP session information.

session-id *session-id* (v2) — Displays information for the specified the L2TP session.

Values 1 — 65535

state *session-state* — Displays the operational state of the L2TP session.

Values closed, closed-by-peer, draining, drained, established, established-idle, idle, wait-reply, wait-conn

peer *ip-address* — Displays information for the specified peer IP address.

Values

ipv4-address	a.b.c.d (host bits must be 0)
ipv6-address	x: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: 32 characters maximum, mandatory for link local addresses

tunnel-id *tunnel-id (v2)* — Displays information for the specified ID of a L2TP tunnel.

In L2TP version 2, it is the 16-bit tunnel ID.

Values 1 — 65535

control-connection-id *connection-id (v3)* — Displays information for the specified ID of a L2TP tunnel. In L2TP version 3, it is the 32-bit control connection ID.

Values 1 — 429496729

Sample Output

```
*A:Dut-C# show router l2tp tunnel
===============================================================================
Conn ID                      Loc-Tu-ID Rem-Tu-ID State             Ses Active
  Group                                                           Ses Total
    Assignment
-------------------------------------------------------------------------------
143523840                    2190      17525     established       2
  isp1.group-2                                                    3
    isp1.tunnel-3
236912640                    3615      58919     closedByPeer      0
  isp1.group-2                                                    2
    isp1.tunnel-2
379387904                    5789      4233      established       1
  isp1.group-1                                                    1
    isp1.tunnel-1
658178048                    10043     33762     draining          3
  isp1.group-2                                                    3
    isp1.tunnel-2
-------------------------------------------------------------------------------
No. of tunnels: 4
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel state closed-by-peer detail
===============================================================================
L2TP Tunnel Status
===============================================================================
Connection ID : 236912640
State         : closedByPeer
IP            : 10.20.1.3
Peer IP       : 10.10.20.100
Name          : lac1.wholesaler.com
Remote Name   : lns2.retailer1.net
Assignment ID : isp1.tunnel-2
Group Name    : isp1.group-2
Error Message : Goodbye!

                                     Remote Conn ID    : 3861315584
Tunnel ID         : 3615             Remote Tunnel ID  : 58919
UDP Port          : 1701             Remote UDP Port   : 1701
Preference        : 100
Hello Interval (s): infinite
Idle TO (s)       : 60               Destruct TO (s)   : 7200
Max Retr Estab    : 5                Max Retr Not Estab: 5
Session Limit     : 1000             AVP Hiding        : never
Transport Type    : udpIp            Challenge         : never
Time Started      : 04/17/2009 18:41:03 Time Idle        : 04/17/2009 18:43:20
Time Established  : 04/17/2009 18:41:03 Time Closed      : 04/17/2009 18:43:20
Stop CCN Result   : generalReq       General Error     : noError
-------------------------------------------------------------------------------
```

```
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel state established
===============================================================================
Conn ID                      Loc-Tu-ID Rem-Tu-ID State             Ses Active
  Group                                                           Ses Total
    Assignment
-------------------------------------------------------------------------------
143523840                    2190      17525     established       2
  isp1.group-2                                                    3
    isp1.tunnel-3
379387904                    5789      4233      established       1
  isp1.group-1                                                    1
    isp1.tunnel-1
-------------------------------------------------------------------------------
No. of tunnels: 2
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel tunnel-id 2190 statistics
===============================================================================
L2TP Tunnel Statistics
===============================================================================
Connection ID: 143523840
-------------------------------------------------------------------------------
             Attempts   Failed                           Active     Total
-------------------------------------------------------------------------------
Sessions     3          0                                2          3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
             Rx                                          Tx
-------------------------------------------------------------------------------
Ctrl Packets 47                                         47
Ctrl Octets  954                                        1438
Error Packets 0                                         0
-------------------------------------------------------------------------------
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel connection-id 143523840 statistics
===============================================================================
L2TP Tunnel Statistics
===============================================================================
Connection ID: 143523840
-------------------------------------------------------------------------------
             Attempts   Failed                           Active     Total
-------------------------------------------------------------------------------
Sessions     3          0                                2          3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
             Rx                                          Tx
-------------------------------------------------------------------------------
Ctrl Packets 48                                         48
Ctrl Octets  974                                        1450
Error Packets 0                                         0
```

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


*A:Dut-C# show router l2tp tunnel remote-tunnel-id 17525 detail
===============================================================================
L2TP Tunnel Status
===============================================================================
Connection ID : 143523840
State         : established
IP            : 10.20.1.3
Peer IP       : 10.10.20.101
Name          : lac1.wholesaler.com
Remote Name   : lns3.retailer1.net
Assignment ID : isp1.tunnel-3
Group Name    : isp1.group-2
Error Message : N/A

                                      Remote Conn ID    : 1148518400
Tunnel ID         : 2190              Remote Tunnel ID  : 17525
UDP Port          : 1701              Remote UDP Port   : 1701
Preference        : 100
Hello Interval (s): 300
Idle TO (s)       : 0                 Destruct TO (s)   : 7200
Max Retr Estab    : 5                 Max Retr Not Estab: 5
Session Limit     : 1000              AVP Hiding        : never
Transport Type    : udpIp             Challenge         : never
Time Started      : 04/17/2009 18:41:14 Time Idle       : N/A
Time Established  : 04/17/2009 18:41:14 Time Closed     : N/A
Stop CCN Result   : noError           General Error     : noError
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel remote-connection-id 1148518400 statistics
===============================================================================
L2TP Tunnel Statistics
===============================================================================
Connection ID: 143523840
-------------------------------------------------------------------------------
             Attempts   Failed                           Active     Total
-------------------------------------------------------------------------------
Sessions     3          0                                2          3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
             Rx                                          Tx
-------------------------------------------------------------------------------
Ctrl Packets  50                                        50
Ctrl Octets   1014                                      1474
Error Packets 0                                         0
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel peer 10.10.20.100 state closed-by-peer detail
```

```
===============================================================================
L2TP Tunnel Status
===============================================================================
Connection ID : 236912640
State         : closedByPeer
IP            : 10.20.1.3
Peer IP       : 10.10.20.100
Name          : lac1.wholesaler.com
Remote Name   : lns2.retailer1.net
Assignment ID : isp1.tunnel-2
Group Name    : isp1.group-2
Error Message : Goodbye!

                                      Remote Conn ID    : 3861315584
Tunnel ID         : 3615              Remote Tunnel ID  : 58919
UDP Port          : 1701              Remote UDP Port   : 1701
Preference        : 100
Hello Interval (s): infinite
Idle TO (s)       : 60                Destruct TO (s)   : 7200
Max Retr Estab    : 5                 Max Retr Not Estab: 5
Session Limit     : 1000              AVP Hiding        : never
Transport Type    : udpIp             Challenge         : never
Time Started      : 04/17/2009 18:41:03 Time Idle         : 04/17/2009 18:43:20
Time Established  : 04/17/2009 18:41:03 Time Closed       : 04/17/2009 18:43:20
Stop CCN Result   : generalReq        General Error     : noError
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel group isp1.group-2
===============================================================================
Conn ID                      Loc-Tu-ID Rem-Tu-ID State              Ses Active
  Group                                                            Ses Total
    Assignment
-------------------------------------------------------------------------------
143523840                    2190      17525     established        2
  isp1.group-2                                                     3
    isp1.tunnel-3
236912640                    3615      58919     closedByPeer       0
  isp1.group-2                                                     2
    isp1.tunnel-2
658178048                    10043     33762     draining           3
  isp1.group-2                                                     3
    isp1.tunnel-2
-------------------------------------------------------------------------------
No. of tunnels: 3
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel assignment-id isp1.tunnel-3 state established sta-
tistics
===============================================================================
L2TP Tunnel Statistics
===============================================================================
Connection ID: 143523840
-------------------------------------------------------------------------------
```

```
              Attempts   Failed                              Active     Total
-------------------------------------------------------------------------------
Sessions      3          0                                   2          3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
              Rx                                             Tx
-------------------------------------------------------------------------------
Ctrl Packets  66                                             66
Ctrl Octets   1310                                           1690
Error Packets 0                                              0
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Dut-C# show router l2tp tunnel local-name lac1.wholesaler.com remote-name
lns2.retailer1.net state draining
===============================================================================
Conn ID                       Loc-Tu-ID Rem-Tu-ID State              Ses Active
  Group                                                             Ses Total
    Assignment
-------------------------------------------------------------------------------
658178048                     10043     33762     draining           3
  isp1.group-2                                                      3
    isp1.tunnel-2
-------------------------------------------------------------------------------
No. of tunnels: 1
===============================================================================
*A:Dut-C#


*A:Fden-Dut2-BSA2# show router l2tp tunnel connection-id 600375296 statistics
===============================================================================
L2TP Tunnel Statistics
===============================================================================

Connection ID: 600375296

-------------------------------------------------------------------------------
              Attempts   Failed                              Active     Total
-------------------------------------------------------------------------------
Sessions      1          0                                   1          1
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
                Rx                                            Tx
-------------------------------------------------------------------------------
Ctrl Packets    6                                             6
Ctrl Octets     553                                           292
Error Packets   0                                             0
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
              Accepted   Duplicate                           Out-Of-Wnd
-------------------------------------------------------------------------------
Fsm Messages 4           0                                   0
-------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
             Unsent Max Unsent Cur                        Ack Max    Ack Cur
-------------------------------------------------------------------------------
Q Length     1          0                                 1          0
-------------------------------------------------------------------------------

Window Size Cur                                          : 4
acceptedMsgType
  StartControlConnectionRequest                          : 1
  StartControlConnectionConnected                        : 1
  IncomingCallRequest                                    : 1
  IncomingCallConnected                                  : 1
  ZeroLengthBody                                         : 3
originalTransmittedMsgType
  StartControlConnectionReply                            : 1
  Hello                                                  : 2
  IncomingCallReply                                      : 1
  ZeroLengthBody                                         : 3

last cleared time                                        : N/A
===============================================================================
```

On LAC (master node after switchover)

```
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 11206656
State        : established
IP           : 10.124.0.9
UDP          : 1701
Peer IP      : 10.124.0.3
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

                                        Remote Conn ID    : 429260800
Tunnel ID         : 171                 Remote Tunnel ID  : 6550
Preference        : 50                  Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : infinite            Destruct TO (s)   : 60
Max Retr Estab    : 5                   Max Retr Not Estab: 5
Session Limit     : 32767               AVP Hiding        : never
Transport Type    : udpIp               Challenge         : never
Time Started      : 02/19/2015 13:00:36 Time Idle         : N/A
Time Established  : 02/19/2015 13:00:36 Time Closed       : N/A
Stop CCN Result   : noError             General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true
```

```
Failover
State             : recoverable
Recovery Conn ID  : N/A
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : mcs
Track SRRP        : 124
Ctrl msg behavior : handle
-------------------------------------------------------------------------------

No. of tunnels: 1
===============================================================================
```

On LAC (slave node after switchover)

```
show router l2tp tunnel detail
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 11206656
State        : draining
IP           : 10.124.0.9
UDP          : 1701
Peer IP      : 10.124.0.3
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

                                       Remote Conn ID    : 429260800
Tunnel ID         : 171                Remote Tunnel ID  : 6550
Preference        : 50                 Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : infinite           Destruct TO (s)   : 60
Max Retr Estab    : 5                  Max Retr Not Estab: 5
Session Limit     : 32767              AVP Hiding        : never
Transport Type    : udpIp              Challenge         : never
Time Started      : 02/19/2015 13:00:36 Time Idle         : N/A
Time Established  : 02/19/2015 13:00:36 Time Closed       : N/A
Stop CCN Result   : noError            General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : recoverable
Recovery Conn ID  : N/A
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : mcs
```

```
Track SRRP        : 124
Ctrl msg behavior : forward-to-mcs-peer
-------------------------------------------------------------------------------

No. of tunnels: 1
===============================================================================
```

On LNS after switchover

```
show router l2tp tunnel detail
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 429260800
State        : established
IP           : 10.124.0.3
UDP          : 1701
Peer IP      : 10.124.0.9
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.9
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.9
Rx src-UDP   : 1701
Name         : mc-lns
Remote Name  : mc-lac
Assignment ID: t1
Group Name   : mc-lns
Acct. Policy : N/A
Error Message: N/A

                                       Remote Conn ID    : 11206656
Tunnel ID         : 6550               Remote Tunnel ID  : 171
Preference        : 50                 Receive Window    : 64
Hello Interval (s): 300
Idle TO (s)       : infinite           Destruct TO (s)   : 60
Max Retr Estab    : 5                  Max Retr Not Estab: 5
Session Limit     : 32767              AVP Hiding        : never
Transport Type    : udpIp              Challenge         : never
Time Started      : 02/19/2015 13:00:36 Time Idle        : N/A
Time Established  : 02/19/2015 13:00:36 Time Closed      : N/A
Stop CCN Result   : noError            General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : not-recoverable
Recovery Conn ID  : N/A
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : mcs
Track SRRP        : (Not specified)
Ctrl msg behavior : handle
-------------------------------------------------------------------------------

No. of tunnels: 1
===============================================================================
```

On LAC (master node after switchover; 7536640 is the recovered tunnel, 1865089024 is the recovery tunnel)

```
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 7536640
State        : established
IP           : 10.124.0.9
UDP          : 1701
Peer IP      : 10.124.0.3
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

                                        Remote Conn ID    : 433324032
Tunnel ID         : 115                 Remote Tunnel ID  : 6612
Preference        : 50                  Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : infinite            Destruct TO (s)   : 60
Max Retr Estab    : 5                   Max Retr Not Estab: 5
Session Limit     : 32767               AVP Hiding        : never
Transport Type    : udpIp               Challenge         : never
Time Started      : 02/19/2015 13:07:53 Time Idle         : N/A
Time Established  : 02/19/2015 13:07:53 Time Closed       : N/A
Stop CCN Result   : noError             General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : recoverable
Recovery Conn ID  : 1865089024
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : recovery-tunnel
Track SRRP        : 124
Ctrl msg behavior : handle
-------------------------------------------------------------------------------

Connection ID: 1865089024
State        : closed
IP           : 10.124.0.9
UDP          : 1701
Peer IP      : 10.124.0.3
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
```

```
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

                                        Remote Conn ID    : 1169424384
Tunnel ID         : 28459               Remote Tunnel ID  : 17844
Preference        : 50                  Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : 60                  Destruct TO (s)   : 60
Max Retr Estab    : 5                   Max Retr Not Estab: 5
Session Limit     : 32767               AVP Hiding        : never
Transport Type    : udpIp               Challenge         : never
Time Started      : 02/19/2015 13:12:05 Time Idle         : N/A
Time Established  : 02/19/2015 13:12:05 Time Closed       : 02/19/2015
13:12:05
Stop CCN Result   : generalReq          General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : not-applicable
Recovery Conn ID  : N/A
Recovery state    : recovery-tunnel
Recovered Conn ID : 7536640
Recovery method   : default
Track SRRP        : 124
Ctrl msg behavior : handle
-------------------------------------------------------------------------------

No. of tunnels: 2
===============================================================================
```

On LAC (slave node after switchover)

```
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 7536640
State        : draining
IP           : 10.124.0.9
UDP          : 1701
Peer IP      : 10.124.0.3
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A
```

```
                                          Remote Conn ID    : 433324032
Tunnel ID         : 115                   Remote Tunnel ID  : 6612
Preference        : 50                    Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : infinite              Destruct TO (s)   : 60
Max Retr Estab    : 5                     Max Retr Not Estab: 5
Session Limit     : 32767                 AVP Hiding        : never
Transport Type    : udpIp                 Challenge         : never
Time Started      : 02/19/2015 13:07:53 Time Idle         : N/A
Time Established  : 02/19/2015 13:07:53 Time Closed       : N/A
Stop CCN Result   : noError               General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : recoverable
Recovery Conn ID  : N/A
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : recovery-tunnel
Track SRRP        : 124
Ctrl msg behavior : forward-to-mcs-peer
-------------------------------------------------------------------------------

No. of tunnels: 1
===============================================================================
```

On LNS after switchover (433324032 is the recovered tunnel, 1169424384 is the recovery tunnel)

```
===============================================================================
L2TP Tunnel Status
===============================================================================

Connection ID: 433324032
State        : established
IP           : 10.124.0.3
UDP          : 1701
Peer IP      : 10.124.0.9
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.9
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.9
Rx src-UDP   : 1701
Name         : mc-lns
Remote Name  : mc-lac
Assignment ID: t1
Group Name   : mc-lns
Acct. Policy : N/A
Error Message: N/A

                                          Remote Conn ID    : 7536640
Tunnel ID         : 6612                  Remote Tunnel ID  : 115
Preference        : 50                    Receive Window    : 64
Hello Interval (s): 300
Idle TO (s)       : infinite              Destruct TO (s)   : 60
Max Retr Estab    : 5                     Max Retr Not Estab: 5
Session Limit     : 32767                 AVP Hiding        : never
Transport Type    : udpIp                 Challenge         : never
```

```
Time Started      : 02/19/2015 13:07:53 Time Idle         : N/A
Time Established  : 02/19/2015 13:07:53 Time Closed       : N/A
Stop CCN Result   : noError             General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : not-recoverable
Recovery Conn ID  : 1169424384
Recovery state    : not-applicable
Recovered Conn ID : N/A
Recovery method   : recovery-tunnel
Track SRRP        : (Not specified)
Ctrl msg behavior : handle
-------------------------------------------------------------------------------

Connection ID: 1169424384
State        : closed
IP           : 10.124.0.3
UDP          : 1701
Peer IP      : 10.124.0.9
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.9
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.9
Rx src-UDP   : 1701
Name         : mc-lns
Remote Name  : mc-lac
Assignment ID: t1
Group Name   : mc-lns
Acct. Policy : N/A
Error Message: N/A

                                       Remote Conn ID    : 1865089024
Tunnel ID         : 17844              Remote Tunnel ID  : 28459
Preference        : 50                 Receive Window    : 64
Hello Interval (s): infinite
Idle TO (s)       : 60                 Destruct TO (s)   : 60
Max Retr Estab    : 5                  Max Retr Not Estab: 5
Session Limit     : 32767              AVP Hiding        : never
Transport Type    : udpIp              Challenge         : never
Time Started      : 02/19/2015 13:12:05 Time Idle         : N/A
Time Established  : 02/19/2015 13:12:05 Time Closed       : 02/19/2015
13:12:05
Stop CCN Result   : generalReq         General Error     : noError
Blacklist-state   : not-blacklisted
Set Dont Fragment : true

Failover
State             : not-applicable
Recovery Conn ID  : N/A
Recovery state    : recovery-tunnel
Recovered Conn ID : 433324032
Recovery method   : default
Track SRRP        : (Not specified)
Ctrl msg behavior : handle
-------------------------------------------------------------------------------
No. of tunnels: 2
===============================================================================
```

Clear Commands

router

Syntax **router** *router-instance*

Context clear>router

Description This command clears for a the router instance in which they are entered.

Parameters *router-instance* — Specify the router name or service ID.

Values *router-name*: Base, management, vpls-management
service-id: 1 — 2147483647

Default Base

arp

Syntax **arp** {**all** | *ip-addr* | **interface** {*ip-int-name* **|** *ip-addr*}}

Context clear>router

Description This command clears all or specific ARP entries.

The scope of ARP cache entries cleared depends on the command line option(s) specified.

Parameters **all —** Clears all ARP cache entries.

ip-addr — Clears the ARP cache entry for the specified IP address.

interface *ip-int-name* **—** Clears all ARP cache entries for the IP interface with the specified name.

interface *ip-addr* **—** Clears all ARP cache entries for the specified IP interface with the specified IP address.

bfd

Syntax **bfd src-ip** *ip-address* **dst-ip** *ip-address*
bfd all

Context clear>router

Description This command enables the context to clear bi-directional forwarding (BFD) sessions and statistics.

session

Syntax **session src-ip** *ip-address* **dst-ip** *ip-address*

Context clear>router>bfd

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.

statistics

Syntax **statistics src-ip** *ip-address* **dst-ip** *ip-address*
statistics all

Context clear>router>bfd

Description This command clears BFD statistics.

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.

all — Clears statistics for all BFD sessions.

dhcp

Syntax **dhcp**

Context clear>router

Description This command enables the context to clear DHCP related information.

dhcp6

Syntax **dhcp6**

Context clear>router

Description This command enables the context to clear DHCP6 related information.

forwarding-table

Syntax **forwarding-table** [*slot-number*]

Context clear>router

Description This command clears entries in the forwarding table (maintained by the IOMs).

If the slot number is not specified, the command forces the route table to be recalculated.

Parameters *slot-number* — Clears the specified card slot.

Default all IOMs

Values 1 — 10

grt-lookup

Syntax **grt-lookup**

Context clear>router

Description This command re-evaluates route policies for GRT.

icmp-redirect-route

Syntax **icmp-redirect-route** {**all** | *ip-address*}

Context clear>router

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.

icmp6

Syntax **icmp6 all**
icmp6 global
icmp6 interface *interface-name*

Context clear>router

Description This command clears ICMP statistics.

Parameters **all —** Clears all statistics.

global — Clears global statistics.

interface-name — Clears ICMP6 statistics for the specified interface.

interface

Syntax **interface** [*ip-int-name* | *ip-addr*] [**icmp**] [urpf-stats] [statistics]

Context clear>router

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-addr* — The IP interface name or IP interface address.

Default All IP interfaces.

icmp — Specifies to reset the ICMP statistics for the IP interface(s) used for ICMP rate limiting.

urpf-stats — Resets the statistics associated with uRPF failures.

statistics — Resets the IP interface traffic statistics.

l2tp

Syntax **l2pt**

Context clear>router

Description This command enables the context to clear L2PT data.

group

Syntax **group** *tunnel-group-name*

Context clear>router>l2tp

Description This command clears L2PT data.

Parameters *tunnel-group-name* — Specifies a Layer Two Tunneling Protocol Tunnel Group name.

tunnel

Syntax **tunnel** *tunnel-id*

Context clear>router>l2tp

Description This command clears L2PT data.

Parameters *tunnel-group-name* — Clears L2TP tunnel statistics.

statistics

Syntax **statistics**

Context clear>router>l2tp
clear>router>l2tp>group
clear>router>l2tp> tunnel

Description This command clears statistics for the specified context.

statistics

Syntax **statistics** [*ip-address* | *ip-int-name*]

Context clear>router>dhcp
clear>router>dhcp6

Description This command clear statistics for DHCP and DHCP6and DHCP6 relay and snooping 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-address* | *ip-int-name* — Displays statistics for the specified IP interface.

neighbor

Syntax **neighbor** {**all** | *ip-address*}
neighbor [**interface** *ip-int-name* | *ip-address*]

Context clear>router

Description This command clears IPv6 neighbor information.

Parameters **all —** Clears IPv6 neighbors.

ip-int-name — Clears the specified neighbor interface information.

Values 32 characters maximum

ip-address — Clears the specified IPv6 neighbors.

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

router-advertisement

Syntax **router-advertisement all**
router-advertisement [**interface** *interface-name*]

Context clear>router

Description This command clears all router advertisement counters.

Parameters *all* — Clears all router advertisement counters for all interfaces.

interface *interface-name* — Clear router advertisement counters for the specified interface.

Debug Commands

destination

Syntax **destination** *trace-destination*

Context debug>trace

Description This command specifies the destination to send trace messages.

Parameters *trace-destination* — The destination to send trace messages.

Values stdout, console, logger, memory

enable

Syntax [**no**] **enable**

Context debug>trace

Description This command enables the trace.

The **no** form of the command disables the trace.

trace-point

Syntax [**no**] **trace-point** [**module** *module-name*] [**type** *event-type*] [**class** *event*-class] [**task** *task-name*] [**function** *function-name*]

Context debug>trace

Description This command adds trace points.

The **no** form of the command removes the trace points.

router

Syntax **router** *router-instance*

Context debug

Description This command configures debugging for a router instance.

Parameters *router-instance* — Specify the router name or service ID.

Values

router-name:	Base, management
service-id:	1 — 2147483647

Default Base

ip

Syntax **ip**

Context debug>router

Description This command configures debugging for IP.

arp

Syntax **arp**

Context debug>router>ip

Description This command configures route table debugging.

icmp

Syntax [**no**] **icmp**

Context **debug>router>ip**

Description This command enables ICMP debugging.

icmp6

Syntax **icmp6** [*ip-int-name*]
no icmp6

Context debug>router>ip

Description This command enables ICMP6 debugging.

interface

Syntax [**no**] **interface** [*ip-int-name* | *ip-address* | *ipv6-address* | *ipv6-address*]

Context debug>router>ip

Description This command displays the router IP interface table sorted by interface index.

Parameters *ip-address* — Only displays the interface information associated with the specified IP address.

Values

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

ip-int-name — Only displays the interface information associated with the specified IP interface name.

Values 32 characters maximum

packet

Syntax **packet** [*ip-int-name* | *ip-address*] [**headers**] [*protocol-id*]
no packet [*ip-int-name* | *ip-address*]

Context debug>router>ip

Description This command enables debugging for IP packets.

Parameters *ip-int-name* — Only displays the interface information associated with the specified IP interface name.

Values 32 characters maximum

ip-address — Only displays the interface information associated with the specified IP address.

headers — Only displays information associated with the packet header.

protocol-id — Specifies the decimal value representing the IP protocol to debug. Well known protocol numbers include ICMP(1), TCP(6), UDP(17). The **no** form the command removes the protocol from the criteria.

Values 0 — 255 (values can be expressed in decimal, hexidecimal, or binary)

route-table

Syntax **route-table** [*ip-prefix*/*prefix-length*]
route-table *ip-prefix*/*prefix-length* **longer**
no route-table

Context debug>router>ip

Description This command configures route table debugging.

Parameters *ip-prefix* — The IP prefix for prefix list entry in dotted decimal notation.

Values

ipv4-prefix	a.b.c.d (host bits must be 0)
ipv4-prefix-length	0 — 32
ipv6-prefix	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
ipv6-prefix-length 0 — 128

longer — Specifies the prefix list entry matches any route that matches the specified *ip-prefix* and prefix *mask* length values greater than the specified *mask*.

tunnel-table

Syntax **tunnel-table** [*ip-address*] [**ldp** | **rsvp** [**tunnel-id** *tunnel-id*]| **sdp** [**sdp-id** *sdp-id*]]

Context debug>router>ip

Description This command enables debugging for tunnel tables.

mtrace

Syntax [**no**] **mtrace**

Context debug>router

Description This command configures debugging for mtrace.

tms

Syntax [**no**] **tms [interface** <*tms-interface*>**] api [detail]** <*tms-interface*>

Context debug>router

Description This command configures debugging for Threat Management Services.

misc

Syntax [**no**] **misc**

Context debug>router>mtrace

Description This command enables debugging for mtrace miscellaneous.

packet

Syntax [**no**] **packet** [**query | request | response**]

Context debug>router>mtrace

Description This command enables debugging for mtrace packets.