
Show Commands

aggregate

Syntax	aggregate [<i>family</i>] [active]
Context	show>router
Description	This command displays aggregate routes.
Parameters	<i>family</i> — 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 [<i>ip-int-name</i> <i>ip-address/mask</i> mac <i>ieee-mac-address</i> 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	<i>ip-address/mask</i> — 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
interfaceService        No        0/0              Down Down
  sap:1/2/1            0/8000
interfaceServiceNonDefault No        0/0              Up   NoServerCo*
  sap:1/2/12:2          0/8000
ip-61.4.113.4          Yes       575/8000         Up   Up
  sap:1/1/1:1          580/8000
=====
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#
```

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 (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x: [0 — FFFF]H

d: [0 — 255]D

ipv6-prefix-length: 0 — 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
-----
=====

```

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.
Echo Reply	The number of echo replies.
Router Advertisements	The number of times the router advertised its location.
Neighbor Advertisements	The number of times the neighbor router advertised its location.

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#
```

interface

- 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.
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.

Label	Description (Continued)
Redirects	The number of packet redirects.
Pkt Too big	The number of packets that exceed appropriate size.
Echo Reply	The number of echo replies.
Router Advertisements	The number of times the router advertised its location.
Neighbor Advertisements	The number of times the neighbor router advertised its location.

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 <i>[[ip-address ip-int-name] [statistics] [detail] [family]]</i> <i>[summary]</i> <i>[exclude-services]</i> interface <i>family</i> <i>[detail]</i>				
Context	show>router				
Description	This command displays the router IP interface table sorted by interface index.				
Parameters	<i>ip-address</i> — Only displays the interface information associated with the specified IP address.				
Values	<table> <tbody> <tr> <td>ipv4-address</td> <td>a.b.c.d (host bits must be 0)</td> </tr> <tr> <td>ipv6-address</td> <td>x:x:x:x:x:x:x (eight 16-bit pieces)</td> </tr> </tbody> </table>	ipv4-address	a.b.c.d (host bits must be 0)	ipv6-address	x:x:x:x:x:x:x (eight 16-bit pieces)
ipv4-address	a.b.c.d (host bits must be 0)				
ipv6-address	x:x:x:x:x:x:x (eight 16-bit pieces)				

x:x:x:x: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.

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. 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 enabled.
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:mlstp-dutA# show router interface "AtoB_1"
```

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

```

=====
Interface-Name          Adm      Opr (v4/v6)  Mode    Port/SapId
  IP-Address            Unnumbered If[system]
-----
AtoB_1                  Down     Down/--      Network 1/2/3:1
  Unnumbered If[system]
-----
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 IP-Address	Adm	Opr (v4/v6)	Mode	Port/SapId PfxState
mda-1-1 20.12.0.43/32	Up	Up/Down	TMS	1/1 n/a
mda-2-1 20.12.0.44/32	Up	Up/Down	TMS	2/1 n/a
mda-2-2 20.12.0.45/32	Up	Up/Down	TMS	2/2 n/a
mda-3-1 20.12.0.46/32	Up	Up/Down	TMS	3/1 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.
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.

Label	Description (Continued)
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 Admin State	Specifies the administrative state, enabled or disabled, of the PTP 1588 peer, that is, whether or not the peer will be used by the Precision Time Protocol (PTP).
PTP oper state	Indicates the operational state of PTP 1588 on the system.
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

```


IP Router Configuration

```
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 Admin State   : enabled            PTP Oper State   : Down
                                                MDA 1/1 Firmware
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
-----
```

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

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

```

-----
Interface
-----
If Name           : net-1/1/3
Admin State       : Up
Oper (v4/v6)      : Up/Up
  Ingress          : Pkts - 12345      Octets - 1234567
  Egress           : Pkts - 12345      Octets - 123456
    IPv4 Offered   : Pkts - 12000      Octets - 120000
      Discard      : Pkts - 123      Octets - 3000
    IPv6 Offered   : Pkts - 345        Octets - 3456
      Discard      : Pkts - 33       Octets - 1000
-----

```

```
A:ALA-A#
```

```
*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.
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

```
=====
```

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: (S) - Static (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
```

LDP 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 Prefix Active Bindings: 21
```

LDP P2MP Bindings (Active)

P2MP-Id	RootAddr	IngLbl	EgrLbl	EgrIntf/ LspId	EgrNextHop
Interface	Op				

```
No Matching Entries Found
```

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

```
LDP LSR ID: 10.20.1.1
```

```
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 Next-hop for Fast Re-Route, TLV - (Type, Length: Value)
```

LDP 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 Prefix Bindings: 12
=====
LDP P2MP Bindings
=====
P2MP-Id      RootAddr
Interface    Peer                IngLbl      EgrLbl EgrIntf/      EgrNextHop
                   LspId
-----
No Matching Entries Found

=====
LDP Service FEC 128 Bindings
=====
Type  VCId      SvcId      SDPIId  Peer                IngLbl  EgrLbl  LMTU  RMTU
-----
No Matching Entries Found

=====
LDP Service FEC 129 Bindings
=====
AGI
SAII
TAII
Type      SvcId      SDPIId  Peer                IngLbl  EgrLbl  LMTU  RMTU
-----
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.

Label	Description (Continued)
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:F8FF:FE78:5C88  net1_1_2
  00:16:4d:50:17:a3      STALE     03h52m08s   Dynamic   Yes
FE80::203:F8FF: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] [<i>network-domain-name</i>]
Context	show>router
Description	This command displays network-domains information.
Parameters	detail — Displays detailed network-domains information. <i>network-domain-name</i> — 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** [*ip-prefix[/prefix-length]*] [**longer** | **exact** | **protocol**] | [**protocol** *protocol-name*] [**all**]
route-table [**family**] **summary**
route-table *tunnel-endpoints* [*ip-prefix[/prefix-length]*] [**longer** | **exact** | **protocol**]
route-table [*ip-prefix[/prefix-length]*] **next-hop-type tunneled**
route-table [**next-hop-type tunneled**]

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 (eight 16-bit pieces)
 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.

Label	Description (Continued)
	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# 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	Metric	Pref
1.1.1.1/32	Remote	BGP	00h00m09s	0	170
Next Hop[Interface Name]					
10.20.1.1 (tunneled:RSVP:1)					

```
No. of Routes: 1
```

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

```
Route Table (Router: Base)
```

Dest Prefix	Age	Pref	Type	Proto	Metric
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
21.2.4.2					
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
22.2.4.2					
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
23.2.4.2					
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
24.2.4.2					
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
100.0.0.1					
11.2.103.0/24	00h59m02s	10	Remote	OSPF	2
Next Hop[Interface Name]					
100.128.0.1					
11.4.101.0/24	02h14m29s	0	Local	Local	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
20.12.0.46/32 Remote Static 00h44m30s 5
vprn1:mda-3-1
100.0.0.1/32 Remote TMS 00h34m39s 167
vprn1:mda-1-1
100.0.0.1/32 Remote TMS 00h34m39s 167
vprn1:mda-3-1
138.203.71.202/32 Remote Static 00h44m29s 5
10.12.0.2

```

```

-----
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      Next Hop[Interface Name]      Type   Proto   Age       Metric  Pref
-----
131.132.133.134/32
66.66.66.66      Remote OSPF  00h02m09s  10      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      Next Hop[Interface Name]      Type   Proto   Age       Metric  Pref
-----
10.10.5.0/24
10.20.1.5 (tunneled:RSVP:1)   Remote OSPF  00h02m20s  1100    10
10.10.10.0/24
10.20.1.5 (tunneled:RSVP:1)   Remote OSPF  00h02m20s  1100    10
10.20.1.5/32
10.20.1.5 (tunneled:RSVP:1)   Remote OSPF  00h02m20s  100     10

```

```
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 Next Hop[Interface Name]	Type	Proto	Age	Pref Metric
10.20.1.5/32 10.20.1.5 (tunneled:RSVP:1)	Remote	OSPF	00h03m55s	10 100

 No. of Routes: 1
 =====

*A:Dut-C# show router route-table protocol tms

 Route Table (Router: Base)
 =====

Dest Prefix[Flags] Next Hop[Interface Name]	Type	Proto	Age	Pref Metric
100.0.0.1/32 vprn1:mda-2-1	Remote	TMS	00h23m07s 0	167

 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#
```


Label	Description (Continued)
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
-----
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 [<i>ip-addr</i> <i>ip-int-name</i> mac <i>ieee-mac-addr</i>]
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 lmask] | [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 lmask* — 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 (eight 16-bit pieces)
 - x:x:x:x:x:d.d.d.d
 - x: [0 — FFFF]H
 - d: [0 — 255]D
 - ipv6-prefix-length: 0 — 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 (eight 16-bit pieces)
 - 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 <code>NextHop</code> for this type of route is <code>black-hole</code> . ID — The static route is an indirect route, where the <code>nextHop</code> 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 <code>NextHop</code> 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. <code>n/a</code> — indicates there is no current egress interface because the static route is inactive or a black hole route.
Active	N — The static route is inactive; for example, the static route is disabled or the next hop IP interface is down. Y — The static route is active.
No. of Routes	The number of routes displayed in the list.

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

Preference : 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
Interface       : n/a
Prefix List     : n/a
Metric          : 1
Admin State     : Up
BFD             : disabled
CPE-check       : disabled
NextHop Type    : IP
Active          : Y
Prefix List Type : n/a
Preference      : 5
Tag             : 0
Community       : 100:33
-----
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	<p>false — Addresses in the range are not exclusively for use for service IP addresses.</p> <p>true — Addresses in the range are exclusively for use for service IP addresses and cannot be assigned to network IP interfaces.</p>

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 [<i>app-name</i>] [dscp dot1p]
Context	show>router>sgt-qos
Description	This command displays application QoS settings.
Parameters	<i>app-name</i> — 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 [<i>dscp-name</i>]
Context	show>router>sgt-qos
Description	This command displays DSCP to FC mappings.
Parameters	<i>dscp-name</i> — 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.
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.
<i>service-id</i>	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
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
Triggered Policies    No

```

```

=====
*A:Performance#

```

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 referring 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` — Displays 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.

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 RestProtSrcMacAct : Disable
Auto Learn Mac Prot: Disabled

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

ETH-CFM SDP-Bind specifics

```
-----
V-MEP Filtering      : Disabled
```

KeepAlive Information :

```
Admin State      : Disabled          Oper State      : Disabled
Hello Time       : 10                Hello Msg Len   : 0
Max Drop Count   : 3                 Hold Down Time  : 10
```

Statistics :

```
I. Fwd. Pkts.    : 0                 I. Dro. Pkts.   : 0
I. Fwd. Octs.    : 0                 I. Dro. Octs.   : 0
E. Fwd. Pkts.    : 2979761          E. Fwd. Octets  : 476761760
```

Control Channel Status

```
-----
PW Status         : disabled          Refresh Timer    : <none>
Peer Status Expire : false              Clear On Timeout : true
```

MCAC Policy Name :

```
MCAC Max Unconst BW: no limit        MCAC Max Mand BW : no limit
MCAC In use Mand BW: 0               MCAC Avail Mand BW: unlimited
MCAC In use Opnl BW: 0               MCAC Avail Opnl BW: unlimited
```

RSVP/Static LSPs

Associated LSP List :

```
-----
No LSPs Associated
```

Class-based forwarding :

```
-----
Class forwarding   : Disabled          EnforceDSTELspFc : Disabled
Default LSP       : Uknwn             Multicast LSP     : None
```

FC Mapping Table

```
=====
FC Name           LSP Name
-----
```

```
No FC Mappings
```

Stp Service Destination Point specifics

```
-----
Stp Admin State   : Down              Stp Oper State   : Down
Core Connectivity : Down
Port Role         : N/A                Port State       : Forwarding
Port Number       : 0                  Port Priority     : 128
Port Path Cost    : 10                 Auto Edge        : Enabled
Admin Edge        : Disabled           Oper Edge        : N/A
Link Type         : Pt-pt              BPDU Encap       : Dot1d
Root Guard        : Disabled           Active Protocol   : N/A
Last BPDU from    : N/A
Designated Bridge : N/A                Designated Port Id: N/A
```

```

Fwd Transitions      : 0
Cfg BPDUs rcvd      : 0
TCN BPDUs rcvd      : 0
TC bit BPDUs rcvd   : 0
RST BPDUs rcvd      : 0
Bad BPDUs rcvd      : 0
Cfg BPDUs tx         : 0
TCN BPDUs tx        : 0
TC bit BPDUs tx     : 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#

```

L2TP Show Commands

l2tp

Syntax	l2tp
Context	show>router
Description	This command enables the context to display L2TP related information.

group

Syntax	group [<i>tunnel-group-name</i> [statistics]]
Context	show>router>l2tp
Description	This command displays L2TP group operational information.
Parameters	<i>tunnel-group-name</i> — 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                                     Assignment          Ses Total
-----
```

```

143523840                2190      17525      established      2
  ispl.group-2          3
  ispl.tunnel-3
236912640                3615      58919      closedByPeer     0
  ispl.group-2          2
  ispl.tunnel-2
658178048                10043     33762      draining         3
  ispl.group-2          3
  ispl.tunnel-2

```

```

-----
No. of tunnels: 3
=====

```

```

*A:Dut-C#

```

```

*A:Dut-C# show router l2tp group ispl.group-2 statistics
Group Name: ispl.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          Assignment           Ses Total
-----
18284544         279      0         closed           0
  ispl.group-2           1
  ispl.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[-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  : ispl.group-2
Assignment ID : ispl.tunnel-2
Error Message : tunnel was closed

```

```

Control Conn ID : 236912640      Remote Conn ID   : 3861317210
Tunnel ID       : 3615         Remote Tunnel ID : 58919
Session ID      : 15275        Remote Session ID : 1626
Time Started    : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03 Time Closed      : 04/17/2009 18:43:20
CDN Result     : generalError   General Error    : noError

```

```

-----
No. of sessions: 3
=====

```

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

```
*A:Dut-C# show router l2tp session session-id 946
```

```

=====
L2TP Session Summary
=====

```

ID	Control Conn ID	Tunnel-ID	Session-ID	State
143524786	143523840	2190	946	established

```

-----
No. of sessions: 1
=====

```

```
*A:Dut-C# show router l2tp session connection-id 143524786 detail
```

```

=====
L2TP Session Status
=====

```

```

Connection ID : 143524786
State         : established
Tunnel Group  : ispl.group-2
Assignment ID : ispl.tunnel-3
Error Message : N/A

```

```

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

```

```

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

```

```
*A:Dut-C# show router l2tp session group ispl.group-2
```

```

=====
L2TP Session Summary
=====

```

ID	Control Conn ID	Tunnel-ID	Session-ID	State
143524786	143523840	2190	946	established
143526923	143523840	2190	3083	established
143531662	143523840	2190	7822	closed
236926987	236912640	3615	14347	closed
236927915	236912640	3615	15275	closed
658187773	658178048	10043	9725	established
658198275	658178048	10043	20227	established
658210606	658178048	10043	32558	established

No. of sessions: 8

*A:Dut-C#

*A:Dut-C# show router l2tp session tunnel-id 2190 state closed detail

L2TP Session Status

```

Connection ID : 143531662
State          : closed
Tunnel Group   : ispl.group-2
Assignment ID  : ispl.tunnel-3
Error Message  : Terminated by PPPoE: RX PADT

Control Conn ID : 143523840      Remote Conn ID   : 1148557524
Tunnel ID       : 2190          Remote Tunnel ID : 17525
Session ID      : 7822          Remote Session ID : 39124
Time Started    : 04/17/2009 18:44:37
Time Established : 04/17/2009 18:44:37 Time Closed       : 04/17/2009 18:44:50
CDN Result      : generalError   General Error     : noError

```

No. of sessions: 1

*A:Dut-C#

*A:Dut-C# show router l2tp session assignment-id ispl.tunnel-2

L2TP Session Summary

ID	Control Conn ID	Tunnel-ID	Session-ID	State
236926987	236912640	3615	14347	closed
236927915	236912640	3615	15275	closed
658187773	658178048	10043	9725	established
658198275	658178048	10043	20227	established
658210606	658178048	10043	32558	established

No. of sessions: 5

*A:Dut-C#

*A:Dut-C# show router l2tp session assignment-id ispl.tunnel-2 state established

L2TP Session Summary

```

ID                Control Conn ID    Tunnel-ID    Session-ID    State
-----
658187773        658178048        10043        9725          established
658198275        658178048        10043        20227         established
658210606        658178048        10043        32558         established
-----

```

No. of sessions: 3

=====
*A:Dut-C#

*A:Dut-C# show router l2tp session control-connection-id 658178048

=====
L2TP Session Summary

```

ID                Control Conn ID    Tunnel-ID    Session-ID    State
-----
658187773        658178048        10043        9725          established
658198275        658178048        10043        20227         established
658210606        658178048        10043        32558         established
-----

```

No. of sessions: 3

=====
*A:Dut-C#

*A:Dut-C# show router l2tp session peer 10.10.20.100

=====
L2TP Session Summary

```

ID                Control Conn ID    Tunnel-ID    Session-ID    State
-----
236926987        236912640        3615        14347         closed
236927915        236912640        3615        15275         closed
658187773        658178048        10043        9725          established
658198275        658178048        10043        20227         established
658210606        658178048        10043        32558         established
-----

```

No. of sessions: 5

=====
*A:Dut-C#

*A:Dut-C# show router l2tp session peer 10.10.20.100 state closed detail

=====
L2TP Session Status

=====
Connection ID : 236926987

State : closed

Tunnel Group : ispl.group-2

Assignment ID : ispl.tunnel-2

Error Message : tunnel was closed

Control Conn ID : 236912640

Remote Conn ID : 3861360381

Tunnel ID : 3615

Remote Tunnel ID : 58919

Session ID : 14347

Remote Session ID : 44797

Time Started : 04/17/2009 18:41:55

Time Established : 04/17/2009 18:41:55

Time Closed : 04/17/2009 18:43:20

CDN Result : generalError

General Error : noError

```

=====
L2TP Session Status
=====

```

```

Connection ID : 236927915
State         : closed
Tunnel Group  : ispl.group-2
Assignment ID : ispl.tunnel-2
Error Message : tunnel was closed

```

```

Control Conn ID : 236912640      Remote Conn ID   : 3861317210
Tunnel ID       : 3615          Remote Tunnel ID  : 58919
Session ID      : 15275         Remote Session ID : 1626
Time Started    : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03 Time Closed       : 04/17/2009 18:43:20
CDN Result      : generalError   General Error     : noError

```

```

-----
No. of sessions: 2
=====

```

```

*A:Dut-C#

```

```

*A:Dut-C# show router l2tp session local-name lacl.wholesaler.com
=====

```

```

L2TP Session Summary
=====

```

ID	Control Conn ID	Tunnel-ID	Session-ID	State
143524786	143523840	2190	946	established
143526923	143523840	2190	3083	established
143531662	143523840	2190	7822	closed
236926987	236912640	3615	14347	closed
236927915	236912640	3615	15275	closed
379407426	379387904	5789	19522	established
658187773	658178048	10043	9725	established
658198275	658178048	10043	20227	established
658210606	658178048	10043	32558	established

```

-----
No. of sessions: 9
=====

```

```

*A:Dut-C#

```

```

*A:Dut-C# show router l2tp session local-name lacl.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 *ip-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* —

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[-interface]
	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                               Assignment                               Ses Total
-----
143523840                             2190      17525    established         2
  ispl.group-2                          3
  ispl.tunnel-3
236912640                             3615      58919    closedByPeer        0
  ispl.group-2                          2
  ispl.tunnel-2
379387904                             5789      4233     established         1
  ispl.group-1                          1
  ispl.tunnel-1
658178048                             10043     33762    draining            3
  ispl.group-2                          3
  ispl.tunnel-2
-----
No. of tunnels: 4
=====
*A:Dut-C#

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

Tunnel ID      : 3615
UDP Port       : 1701
Preference     : 100
Hello Interval (s): infinite
Idle TO (s)    : 60
Max Retr Estab : 5
Session Limit  : 1000
Transport Type : udpIp
Time Started   : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03
Stop CCN Result : generalReq

Remote Conn ID : 3861315584
Remote Tunnel ID : 58919
Remote UDP Port : 1701
Destruct TO (s) : 7200
Max Retr Not Estab: 5
AVP Hiding     : never
Challenge      : never
Time Idle      : 04/17/2009 18:43:20
Time Closed    : 04/17/2009 18:43:20
General Error   : noError
-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel state established
```

```

=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                                     Ses Total
  Assignment
-----
143523840        2190     17525   established          2
   ispl.group-2                                     3
     ispl.tunnel-3
379387904        5789     4233   established          1
   ispl.group-1                                     1
     ispl.tunnel-1
-----

```

No. of tunnels: 2

*A:Dut-C#

*A:Dut-C# show router l2tp tunnel tunnel-id 2190 statistics

L2TP Tunnel Statistics

Connection ID: 143523840

```

-----
              Attempts  Failed                Active  Total
-----
Sessions      3           0                2       3
-----
              Rx                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 : ispl.tunnel-3
Group Name    : ispl.group-2
Error Message : N/A

Tunnel ID      : 2190
UDP Port       : 1701
Preference     : 100
Hello Interval (s): 300
Idle TO (s)    : 0
Max Retr Estab : 5
Session Limit  : 1000
Transport Type : udpIp
Time Started   : 04/17/2009 18:41:14
Time Established : 04/17/2009 18:41:14
Stop CCN Result : noError

Remote Conn ID : 1148518400
Remote Tunnel ID : 17525
Remote UDP Port : 1701
Destruct TO (s) : 7200
Max Retr Not Estab: 5
AVP Hiding      : never
Challenge       : never
Time Idle       : N/A
Time Closed     : N/A
General Error   : noError
=====

```

```

No. of tunnels: 1
=====

```

```

*A:Dut-C#

```

```

*A:Dut-C# show router l2tp tunnel remote-connection-id 1148518400 statistics
=====

```

```

L2TP Tunnel Statistics
=====
Connection ID: 143523840
-----

```

	Attempts	Failed	Active	Total
Sessions	3	0	2	3

```

-----
Rx                                     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 : ispl.tunnel-2
Group Name   : ispl.group-2
Error Message : Goodbye!
```

```
Tunnel ID      : 3615
UDP Port       : 1701
Preference     : 100
Hello Interval (s) : infinite
Idle TO (s)    : 60
Max Retr Estab : 5
Session Limit  : 1000
Transport Type : udpIp
Time Started   : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03
Stop CCN Result : generalReq

Remote Conn ID : 3861315584
Remote Tunnel ID : 58919
Remote UDP Port : 1701
Destruct TO (s) : 7200
Max Retr Not Estab : 5
AVP Hiding      : never
Challenge       : never
Time Idle       : 04/17/2009 18:43:20
Time Closed     : 04/17/2009 18:43:20
General Error   : noError
```

No. of tunnels: 1

*A:Dut-C#

*A:Dut-C# show router l2tp tunnel group ispl.group-2

```
=====
```

Conn ID	Loc-Tu-ID	Rem-Tu-ID	State	Ses Active
Group				Ses Total
Assignment				
143523840	2190	17525	established	2
ispl.group-2				3
ispl.tunnel-3				
236912640	3615	58919	closedByPeer	0
ispl.group-2				2
ispl.tunnel-2				
658178048	10043	33762	draining	3
ispl.group-2				3
ispl.tunnel-2				

```
=====
```

No. of tunnels: 3

*A:Dut-C#

*A:Dut-C# show router l2tp tunnel assignment-id ispl.tunnel-3 state established statistics

L2TP Tunnel Statistics

Connection ID: 143523840

```
=====
```

	Attempts	Failed	Active	Total
Sessions	3	0	2	3

```
=====
```

Rx Tx

```

-----
Ctrl Packets 66                               66
Ctrl Octets  1310                             1690
Error Packets 0                               0
-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel local-name lacl.wholesaler.com remote-name
lms2.retailer1.net state draining
=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                                     Ses Total
  Assignment
-----
658178048        10043    33762    draining          3
  ispl.group-2                                     3
  ispl.tunnel-2
-----
No. of tunnels: 1
=====
*A:Dut-C#

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

Connection ID: 600375296

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

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

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

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

```



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

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

Clear Commands

router

Syntax	router <i>router-instance</i>									
Context	clear>router									
Description	This command clears for a the router instance in which they are entered.									
Parameters	<i>router-instance</i> — Specify the router name or service ID. <table><tr><td>Values</td><td><i>router-name:</i></td><td>Base, management, vpls-management</td></tr><tr><td></td><td><i>service-id:</i></td><td>1 — 2147483647</td></tr><tr><td>Default</td><td>Base</td><td></td></tr></table>	Values	<i>router-name:</i>	Base, management, vpls-management		<i>service-id:</i>	1 — 2147483647	Default	Base	
Values	<i>router-name:</i>	Base, management, vpls-management								
	<i>service-id:</i>	1 — 2147483647								
Default	Base									

arp

Syntax	arp { all <i>ip-addr</i> interface { <i>ip-int-name</i> <i>ip-addr</i> }}
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. <i>ip-addr</i> — Clears the ARP cache entry for the specified IP address. interface <i>ip-int-name</i> — Clears all ARP cache entries for the IP interface with the specified name. interface <i>ip-addr</i> — Clears all ARP cache entries for the specified IP interface with the specified IP address.

bfd

Syntax	bfd src-ip <i>ip-address</i> dst-ip <i>ip-address</i> 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 <i>ip-address</i> dst-ip <i>ip-address</i>
Context	clear>router>bfd
Description	This command clears BFD sessions.
Parameters	src-ip <i>ip-address</i> — Specifies the address of the local endpoint of this BFD session. dst-ip <i>ip-address</i> — Specifies the address of the remote endpoint of this BFD session.

statistics

Syntax	statistics src-ip <i>ip-address</i> dst-ip <i>ip-address</i> statistics all
Context	clear>router>bfd
Description	This command clears BFD statistics.
Parameters	src-ip <i>ip-address</i> — Specifies the address of the local endpoint of this BFD session. dst-ip <i>ip-address</i> — 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 [<i>slot-number</i>]
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	<i>slot-number</i> — 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 <i>ip-address</i> }
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. <i>ip-address</i> — Clears the routes associated with the specified IP address.

icmp6

Syntax	icmp6 all icmp6 global icmp6 interface <i>interface-name</i>
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 [<i>ip-int-name</i> <i>ip-addr</i>] [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	<i>ip-int-name</i> <i>ip-addr</i> — 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	l2tp
Context	clear>router
Description	This command enables the context to clear L2PT data.

group

Syntax	group <i>tunnel-group-name</i>
Context	clear>router>l2tp
Description	This command clears L2PT data.
Parameters	<i>tunnel-group-name</i> — Specifies a Layer Two Tunneling Protocol Tunnel Group name.

tunnel

Syntax	tunnel <i>tunnel-id</i>
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 (eight 16-bit pieces)
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 <i>interface-name</i>]
Context	clear>router
Description	This command clears all router advertisement counters.
Parameters	<i>all</i> — Clears all router advertisement counters for all interfaces. interface <i>interface-name</i> — Clear router advertisement counters for the specified interface.

Debug Commands

destination

Syntax	destination <i>trace-destination</i>
Context	debug>trace
Description	This command specifies the destination to send trace messages.
Parameters	<i>trace-destination</i> — 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 <i>module-name</i>] [type <i>event-type</i>] [class <i>event-class</i>] [task <i>task-name</i>] [function <i>function-name</i>]
Context	debug>trace
Description	This command adds trace points. The no form of the command removes the trace points.

router

Syntax	router <i>router-instance</i>
Context	debug
Description	This command configures debugging for a router instance.
Parameters	<i>router-instance</i> — Specify the router name or service ID. Values <i>router-name:</i> Base, management <i>service-id:</i> 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 (eight 16-bit pieces)
	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, hexadecimal, 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 (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
x:	[0 — FFFF]H

ipv6-prefix-length d: [0 — 255]D
 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.

