Show Commands

auto-lsp

Syntax **auto-lsp** [*lsp-name*] **auto-bandwidth**
auto-lsp [*lsp-name*] [**status** {**up|down**}] [**detail**] [**to** *ip-address***]**
auto-lsp [*lsp-name*] [**status** {**up|down**}] {**mesh-p2p | one-hop-p2p**} [**detail**] [**to** *ip-address*]

Context show>router>mpls

Parameters *lsp-name* — Specifies the LSP name.

Values 80 characters max

up|down — Specifies the state.

mesh-p2p|one-hop-p2p — Specifies the auto LSP type.

Sample Output

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

===============================================================================
MPLS Auto-LSP Template
===============================================================================
LSP Name                              Type             Fastfail    Admin   Oper
                                                       Config      State   State
-------------------------------------------------------------------------------
meshP2pLsp3-10.20.1.6-61441           MeshP2P          Yes         Up      Up
meshP2pLsp2-10.20.1.1-61442           MeshP2P          Yes         Up      Up
meshP2pLsp2-10.20.1.2-61443           MeshP2P          Yes         Up      Up
meshP2pLsp2-10.20.1.4-61444           MeshP2P          Yes         Up      Up
meshP2pLsp2-10.20.1.5-61445           MeshP2P          Yes         Up      Up
meshP2pLsp2-10.20.1.6-61446           MeshP2P          Yes         Up      Up
meshP2pLsp10-10.20.1.1-61447          MeshP2P          Yes         Up      Up
meshP2pLsp10-10.20.1.2-61448          MeshP2P          Yes         Up      Up
```

bypass-tunnel

Syntax **bypass-tunnel** [**to** *ip-address*] [**protected-lsp** [*lsp-name*]] [**dynamic** | **manual | p2mp**] [**detail**]

Context show>router>mpls

Description If fast reroute is enabled on an LSP and the facility method is selected, instead of creating a separate LSP for every LSP that is to be backed up, a single LSP is created which serves as a backup for a set of LSPs. Such an LSP tunnel is called a bypass tunnel.

Parameters *ip-address* — Specify the IP address of the egress router.

lsp-name — Specify the name of the LSP protected by the bypass tunnel.

dynamic — Displays dynamically assigned labels for bypass protection.

manual — Displays manually assigned labels for bypass protection.

detail — Displays detailed information.

p2mp — Displays P2MP bypass tunnel information.

Output **MPLS Bypass Tunnel Output Fields —** The following table describes MPLS bypass tunnel output fields.

Label	Description
To	The system IP address of the egress router.
State	The LSP's administrative state.
Out I/F	Specifies the name of the network IP interface.
Out Label	Specifies the incoming MPLS label on which to match.
Reserved BW (Kbps)	Specifies the amount of bandwidth in megabits per second (Mbps) reserved for the LSP.

Sample Output

```
*A:Dut-B# show router mpls bypass-tunnel detail

===============================================================================
MPLS Bypass Tunnels (Detail)
===============================================================================
-------------------------------------------------------------------------------
bypass-node10.20.1.4
-------------------------------------------------------------------------------
To              : 10.20.1.7          State               : Up
Out I/F         : 1/1/4              Out Label           : 131071
Up Time         : 0d 01:17:22        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 1
Type            : Dynamic
Setup Priority  : 7                  Hold Priority       : 0
Class Type      : 0
Exclude Node    : 10.20.1.4          Inter-Area          : True
Computed Hops   :
    10.10.8.2(S)                     Egress Admin Groups : None
-> 10.10.8.6(SA)                    Egress Admin Groups : None
-> 10.20.1.7(L)                     Egress Admin Groups : None
Actual Hops     :
    10.10.8.2(10.20.1.2)             Record Label        : N/A
-> 10.10.8.6(10.20.1.6)             Record Label        : 131071
-> 10.20.1.7(10.20.1.7)             Record Label        : 131068
-> 10.10.22.7                       Record Label        : 131068

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


*A:Dut-A>config>router>mpls>lsp$ /show router mpls bypass-tunnel detail

===============================================================================
MPLS Bypass Tunnels (Detail)
```

```
===============================================================================
-------------------------------------------------------------------------------
bypass-node10.20.1.2
-------------------------------------------------------------------------------
To              : 10.20.1.4          State               : Up
Out I/F         : 1/1/2              Out Label           : 131070
Up Time         : 0d 00:00:18        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 1
Type            : Dynamic
Setup Priority  : 7                  Hold Priority       : 0
Class Type      : 0
Exclude Node    : None               Inter-Area          : False
Computed Hops   :
    10.20.1.1, If Index : 3(S)       Egress Admin Groups : None
-> 10.20.1.3, If Index : 2(S)       Egress Admin Groups : None
-> 10.20.1.4, If Index : 5(S)       Egress Admin Groups : None
Actual Hops     :
    10.20.1.1, If Index : 3          Record Label        : N/A
-> 10.20.1.3, If Index : 2          Record Label        : 131070
-> 10.20.1.4, If Index : 5          Record Label        : 131070

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

B:Dut-B>config>router>mpls>lsp# show router mpls bypass-tunnel detail

===============================================================================
MPLS Bypass Tunnels (Detail)
===============================================================================
-------------------------------------------------------------------------------
bypass-node10.20.1.4
-------------------------------------------------------------------------------
To              : 10.10.10.6         State               : Up
Out I/F         : lag-1              Out Label           : 131071
Up Time         : 0d 00:00:06        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 1
Type            : Dynamic
Setup Priority  : 7                  Hold Priority       : 0
Class Type      : 0
Exclude Node    : None
Actual Hops     :
    10.10.12.2(S)                     Egress Admin Groups:
                                      lime
                                      olive
                                      blue
                                      black
                                      acqua
-> 10.10.12.3(S)                     Egress Admin Groups:
                                      olive
                                      Unknown Group 9
                                      Unknown Group 11
                                      black
                                      Unknown Group 16
                                      Unknown Group 18
-> 10.10.5.5(S)                      Egress Admin Groups:
                                      purple
                                      Unknown Group 7
                                      Unknown Group 11
                                      orange
                                      acqua
                                      Unknown Group 16
                                      Unknown Group 19
```

```
                                      Unknown Group 21
                                      Unknown Group 22
                                      Unknown Group 26
                                      khaki
-> 10.10.10.6(S)                     Egress Admin Groups: None

===============================================================================:


*A:SRU4>show>router>mpls# bypass-tunnel
===============================================================================
MPLS Bypass Tunnels
===============================================================================
Legend :  m - Manual      d - Dynamic      p - P2mp
===============================================================================
To              State  Out I/F        Out Label     Reserved   Protected  Type
                                                     BW (Kbps)  LSP Count
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================
*A:SRU4>show>router>mpls#


*A:Dut-B# show router mpls bypass-tunnel detail
===============================================================================
MPLS Bypass Tunnels (Detail)
===============================================================================
bypass-link10.10.104.4
-------------------------------------------------------------------------------
To              : 10.10.101.4        State               : Up
Out I/F         : 1/1/2:1            Out Label           : 129994
Up Time         : 0d 00:02:33        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 1
Type            : Dynamic
SetupPriority   : 7                  Hold Priority       : 0
Class Type      : 0
Actual Hops     :
    10.10.101.2     -> 10.10.101.4
===============================================================================
*A:Dut-B#


*A:Dut-B# show router mpls bypass-tunnel detail
===============================================================================
MPLS Bypass Tunnels (Detail)
-------------------------------------------------------------------------------
bypass-link10.10.104.4
-------------------------------------------------------------------------------
To              : 10.10.101.4        State               : Up
Out I/F         : 1/1/2:1            Out Label           : 129994
Up Time         : 0d 00:02:33        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 1
Type            : Dynamic
SetupPriority   : 7                  Hold Priority       : 0
Class Type      : 0
Actual Hops     :
    10.10.101.2     -> 10.10.101.4
===============================================================================
*A:Dut-B#
```

interface

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

Context show>router>mpls

Description This command displays MPLS interface information.

Parameters *ip-int-name* — The name of the network IP interface. An interface name cannot be in the form of an IP address. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

ip-address — The system or network interface IP address.

label-map *label* — The MPLS label on which to match.

Values 32 — 1048575

statistics — Displays MPLS interface name and the number of packets and octets sent and received on an MPLS interface.

Output **MPLS Interface Output Fields —** The following table describes MPLS interface output fields.

Label	Description
Interface	The interface name.
Port-id	The port ID displayed in the *slot/mda/port* format.
Adm	Specifies the administrative state of the interface.
Opr	Specifies the operational state of the interface.
Te-metric	Specifies the traffic engineering metric used on the interface.
Srlg Groups	Specifies the shared risk loss group (SRLG) name(s).
Interfaces	The total number of interfaces.
Transmitted	Displays the number of packets and octets transmitted from the interface.
Received	Displays the number of packets and octets received.
In Label	Specifies the ingress label.
In I/F	Specifies the ingress interface.
Out Label	Specifies the egress label.
Out I/F	Specifies the egress interface.
Next Hop	Specifies the next hop IP address for the static LSP.
Type	Specifies whether the label value is statically or dynamically assigned.

Sample Output

```
*A:SRU4>config>router>mpls# show router mpls interface
===============================================================================
MPLS Interfaces
===============================================================================
Interface                           Port-id           Adm    Opr    TE-metric
-------------------------------------------------------------------------------
system                              system            Up     Up     None
  Admin Groups                      None
  Srlg Groups                       None
aps-1                               aps-1             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       3410
aps-2                               aps-2             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       3420
aps-3                               aps-3             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       3430
sr4-1                               1/1/4             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       3440
ess-7-1                             3/2/4             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       45100
ess-7-2                             3/2/5             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       45110
...
g7600                               3/1/2             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       41.80
m160                                3/2/1             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       420.40
-------------------------------------------------------------------------------
Interfaces : 35
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls#  show router mpls interface "hubA"
===============================================================================
MPLS Interface : hubA
===============================================================================
Interface                           Port-id           Adm    Opr    TE-metric
-------------------------------------------------------------------------------
hubA                                3/2/8             Up     Up     None
  Admin Groups                      None
  Srlg Groups                       44.200
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls#  show router mpls interface "hubA" label-map 203
===============================================================================
MPLS Interface : hubA (Label-Map 203)
===============================================================================
```

```
In Label  In I/F     Out Label Out I/F    Next Hop          Type      Adm  Opr
-------------------------------------------------------------------------------
203       3/2/8      403       1/1/9      11.22.10.3        Static    Up   Up
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls interface statistics
===============================================================================
MPLS Interface (statistics)
===============================================================================
Interface      : aps-1
  Transmitted  : Pkts - 76554                Octets - 7930285
  Received     : Pkts - 17068                Octets - 3626842

Interface      : aps-2
  Transmitted  : Pkts - 0                    Octets - 0
  Received     : Pkts - 1311                 Octets - 219888

Interface      : aps-3
  Transmitted  : Pkts - 0                    Octets - 0
  Received     : Pkts - 3                    Octets - 234

Interface      : sr4-1
  Transmitted  : Pkts - 0                    Octets - 0
  Received     : Pkts - 0                    Octets - 0

Interface      : ess-7-1
  Transmitted  : Pkts - 113537               Octets - 15058332
  Received     : Pkts - 13193                Octets - 1091492

Interface      : ess-7-2
  Transmitted  : Pkts - 166133               Octets - 22762482
  Received     : Pkts - 16672                Octets - 1368464

Interface      : ess-7-3
  Transmitted  : Pkts - 122934               Octets - 11033246
  Received     : Pkts - 12256                Octets - 1026826
...

Interface      : m160
  Transmitted  : Pkts - 17188024             Octets - 2183076528
  Received     : Pkts - 677745               Octets - 59367236
===============================================================================
*A:SRU4>config>router>mpls#
```

label

Syntax **label** *start-label* [*end-label* | *in-use* | **owner**]

Context show>router>mpls

Description Displays MPLS labels exchanged.

Parameters *start-label* — The label value assigned at the ingress router.

end-label — The label value assigned for the egress router.

in-use — The number of in-use labels displayed.

Output **MPLS Label Output Fields —** The following table describes MPLS label output fields.

Label	Description
Label	Displays the value of the label being displayed.
Label Type	Specifies whether the label value is statically or dynamically assigned.
Label Owner	The label owner.
In-use labels in entire range	The total number of labels being used by RSVP.

Sample Output

```
*A:mlstp-dutA# show router mpls label-range

===============================================================================
Label Ranges
===============================================================================
Label Type      Start Label     End Label       Aging           Total Available
-------------------------------------------------------------------------------
Static-lsp      32              16415           -               16364
Static-svc      16416           32799           -               16376
Dynamic         32800           131071          0               98268
===============================================================================


*A:SRU4>config>router>mpls#    show router mpls label 202
===============================================================
MPLS Label 202
===============================================================
Label               Label Type          Label Owner
---------------------------------------------------------------
202                 static-lsp          STATIC
---------------------------------------------------------------
In-use labels in entire range                   : 5057
===============================================================
*A:SRU4>config>router>mpls#
```

label-range

Syntax **label-range**

Context show>router>mpls

Description This command displays the MPLS label range.

Output **MPLS Label Range Output —** The following table describes the MPLS label range output fields.

Label	Description
Label Type	Displays the information about **static-lsp**, **static-svc**, and **dynamic** label types.
Start Label	The label value assigned at the ingress router.
End Label	The label value assigned for the egress router.
Aging	The number of labels released from a service which are transitioning back to the label pool. Labels are aged 15 seconds.
Total Available	The number of label values available.

Sample Output

```
*A:SRU4>config>router>mpls# show router mpls label-range
===============================================================================
Label Ranges
===============================================================================
Label Type      Start Label     End Label       Aging          Total Available
-------------------------------------------------------------------------------
Static-lsp      32              1023            -              736
Static-svc      2048            18431           -              16384
Dynamic         32768           131071          258            93232
===============================================================================
*A:SRU4>config>router>mpls#
```

lsp

Syntax **lsp** [*lsp-name*] [**status** {**up**|**down**}] [**from** ip-address| **to** ip-address] [**detail**] [**auto-lsp** {**all**|**mesh-p2p**|**one-hop-p2p**}]
lsp {**transit**|**terminate**} [**status** {**up**|**down**}] [**from** *ip-address*| **to** *ip-address* | **lsp-name** *name*] [**detail**]
lsp count
lsp [*lsp-name*] **activepath** [**auto-lsp** {**all**|**mesh-p2p**|**one-hop-p2p**}]
lsp [*lsp-name*] **path** [*path-name*] [**status** {**up**|**down**}] [**detail**] [**auto-lsp** {**all**|**mesh-p2p**|**one-hop-p2p**}]
lsp [*lsp-name*] **path** [*path-name*] **mbb** [**auto-lsp** {**all**|**mesh-p2p**|**one-hop-p2p**}]
lsp [*lsp-name*] **auto-bandwidth** [**auto-lsp** {**all**|**mesh-p2p**|**one-hop-p2p**}]
lsp [*lsp-name*] **path** [*path-name*] **mbb**

Context show>router>mpls

Description This command displays LSP details.

Parameters **lsp** *lsp-name* — The name of the LSP used in the path.

status up — Displays an LSP that is operationally up.

status down — Displays an LSP that is operationally down.

from *ip-address* — Displays the IP address of the ingress router for the LSP.

to *ip-address* — Displays the IP address of the egress router for the LSP.

transit — Displays the number of static LSPs that transit through the router.

terminate — Displays the number of static LSPs that terminate at the router.

lsp *count* — Displays the total number of LSPs.

activepath — Displays the present path being used to forward traffic.

mbb — Displays make-before-break (MBB) information.

detail — Displays detailed information.

Output **MPLS LSP Output —** The following table describes MPLS LSP output fields.

Label	Description
LSP Name	The name of the LSP used in the path.
To	The system IP address of the egress router for the LSP.
Adm State	Down – The path is administratively disabled.
	Up – The path is administratively enabled.
Oper State	Down – The path is operationally down.
	Up – The path is operationally up.
Oper State	Down – The path is operationally down.
	Up – The path is operationally up.
LSPs	The total number of LSPs configured.
From	The IP address of the ingress router for the LSP.
LSP Up Time	The length of time the LSP has been operational.
Transitions	The number of transitions that have occurred for the LSP.
Retry Limit	The number of attempts that the software should make to re-establish the LSP after it has failed.
Signaling	Specifies the signaling style.
Hop Limit	The maximum number of hops that an LSP can traverse, including the ingress and egress routers.
Fast Reroute/ FastFail Config	enabled – Fast reroute is enabled. In the event of a failure, traffic is immediately rerouted on the pre-computed detour LSP, thus minimizing packet loss.
	disabled – There is no detour LSP from each node on the primary path.
ADSPEC	enabled – The LSP will include advertising data (ADSPEC) objects in RSVP messages.

Label	Description (Continued)
	`disabled` – The LSP will not include advertising data (ADSPEC) objects in RSVP messages.
`Primary`	The preferred path for the LSP.
`Secondary`	The alternate path that the LSP will use if the primary path is not available.
`Bandwidth`	The amount of bandwidth in megabits per second (Mbps) reserved for the LSP path.
`LSP Up Time`	The total time in increments that the LSP path has been operational.
`LSP Tunnel ID`	The value which identifies the label switched path that is signaled for this entry.
`To`	The IP address of the egress router for the LSP.
`LSP Down Time`	The total time in increments that the LSP path has not been operational.
`Path Changes`	The number of path changes this LSP has had. For every path change (path down, path up, path change), a corresponding syslog/trap (if enabled) is generated.
`Retry Timer`	The time, in seconds, for LSP re-establishment attempts after an LSP failure.
`Resv Style`	`se` – Specifies a shared reservation environment with a limited reservation scope. This reservation style creates a single reservation over a link that is shared by an explicit list of senders. `ff` – Specifies a shared reservation environment with an explicit reservation scope. Specifies an explicit list of senders and a distinct reservation for each of them.
`Negotiated MTU`	The size of the maximum transmission unit (MTU) that is negotiated during establishment of the LSP.
`FR Hop Limit`	The total number of hops a detour LSP can take before merging back onto the main LSP path.
`LastResignalAttempt`	Displays the system up time when the last attempt to resignal this LSP was made.
`MBB Type`	Displays an enumerated integer that specifies the type of make-before-break (MBB). If none displays then there is no MBB in progress or no last MBB.
`MBB State`	Displays the state of the most recent invocation of the make-before-break functionality.
`End at`	Displays the system up time when the last MBB ended.

Label	Description (Continued)
Old Metric	Displays the cost of the traffic engineered path for the LSP path prior to MBB.
NextRetryIn	Displays the amount of time remaining, in seconds, before the next attempt is made to retry the in-progress MBB.
RetryAttempt	Displays the number attempts for the MBB is in progress.
Failure Code	Displays the reason code for in-progress MBB failure. A value of **none** indicates that no failure has occurred.
Failure Node	Displays the IP address of the node in the LSP path at which the in-progress MBB failed. When no failure has occurred, this value is **none**.

Sample Output

```
*A:SetupCLI# show router mpls lsp "lsp_1" path "500" detail
===============================================================================
MPLS LSP lsp_1 Path 500 (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
    A - ABR
===============================================================================
-------------------------------------------------------------------------------
LSP lsp_1 Path 500
-------------------------------------------------------------------------------
LSP Name          : lsp_1
Path LSP ID       : 38400
From              : 10.10.1.1           To                  : 10.10.1.2
Admin State       : Up                  Oper State          : Down
Path Name         : 500                 Path Type           : Primary
Path Admin        : Up                  Path Oper           : Down
Out Interface     : n/a                 Out Label           : n/a
Path Up Time      : 0d 00:00:00         Path Down Time      : 0d 00:00:43
Retry Limit       : 0                   Retry Timer         : 30 sec
Retry Attempt     : 2                   Next Retry In       : 19 sec
BFD Template      : None                BFD Ping Interval   : 60
BFD Enable        : FALSE

Adspec            : Disabled            Oper Adspec         : N/A
CSPF              : Disabled            Oper CSPF           : N/A
Least Fill        : Disabled            Oper LeastFill      : N/A
FRR               : Disabled            Oper FRR            : N/A
Prop Adm Grp      : Disabled            Oper Prop AG        : N/A
Inter-area        : N/A

Neg MTU           : 0                   Oper MTU            : N/A
Bandwidth         : No Reservation      Oper Bw             : N/A
Hop Limit         : 255                 Oper HopLimit       : N/A
Record Route      : Record              Oper Rec Route      : N/A
Record Label      : No Record           Oper Rec Label      : N/A
Setup Priority    : 7                   Oper Setup Priority : N/A
```

```
Hold Priority    : 7                    Oper Hold Priority   : N/A
Class Type       : 7                    Oper CT              : N/A
Backup CT        : 5
MainCT Retry     : 500
    Rem          :
MainCT Retry     : 500
    Limit        :
Include Grps     :                      Oper InclGrps        :
None                                           N/A
Exclude Grps     :                      Oper ExclGrps        :
None                                           N/A

Adaptive         : Enabled              Oper Metric          : N/A
Preference       : n/a
Path Trans       : 0                    CSPF Queries         : 0
Failure Code     : noResourcesAvailable
Failure Node     : 9.1.255.255
Explicit Hops    :
    No Hops Specified
Actual Hops      :
    No Hops Specified
Resignal Eligible: False
Last Resignal    : n/a                  CSPF Metric          : N/A
===============================================================================


*A:Dut-A>config>router>mpls>lsp$ /show router mpls lsp "1" path detail
===============================================================================
MPLS LSP 1 Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
    A - ABR
===============================================================================
-------------------------------------------------------------------------------
LSP 1 Path 1
-------------------------------------------------------------------------------
LSP Name    : 1                                 Path LSP ID : 30208
From        : 10.20.1.1                         To          : 10.20.1.6
Adm State   : Up                                Oper State  : Up
Path Name   : 1                                 Path Type   : Primary
Path Admin  : Up                                Path Oper   : Up
OutInterface: 1/1/1                             Out Label   : 131071
Path Up Time: 0d 00:00:05                       Path Dn Time: 0d 00:00:00
Retry Limit : 0                                 Retry Timer : 30 sec
RetryAttempt: 0                                 NextRetryIn : 0 sec

Adspec      : Disabled                          Oper Adspec : Disabled
CSPF        : Enabled                           Oper CSPF   : Enabled
Least Fill  : Disabled                          Oper LeastF*: Disabled
FRR         : Enabled                           Oper FRR    : Enabled
FRR NodePro*: Enabled                           Oper FRR NP : Enabled
FR Hop Limit: 16                                Oper FRHopL*: 16
FR Prop Adm*: Disabled                          Oper FRProp*: Disabled
Prop Adm Grp: Disabled                          Oper PropAG : Disabled
Inter-area  : False

Neg MTU     : 1496                              Oper MTU    : 1496
```

```
Bandwidth   : No Reservation                     Oper Bw     : 0 Mbps
Hop Limit   : 255                               Oper HopLim*: 255
Record Route: Record                            Oper RecRou*: Record
Record Label: Record                            Oper RecLab*: Record
SetupPriori*: 7                                 Oper SetupP*: 7
Hold Priori*: 0                                 Oper HoldPr*: 0
Class Type  : 0                                 Oper CT     : 0
Backup CT   : None
MainCT Retry: n/a
    Rem     :
MainCT Retry: 0
    Limit   :
Include Grps:                                   Oper InclGr*:
None                                           None
Exclude Grps:                                   Oper ExclGr*:
None                                           None

Adaptive    : Enabled                           Oper Metric : 3000
Preference  : n/a
Path Trans  : 1                                 CSPF Queries: 1
Failure Code: noError                           Failure Node: n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.20.1.1, If Index : 2 @ n                  Record Label        : N/A
-> 10.20.1.2, If Index : 2 @ n                  Record Label        : 131071
-> 10.20.1.4, If Index : 2                      Record Label        : 131071
-> 10.20.1.6, If Index : 2                      Record Label        : 131071
ComputedHops:
    10.20.1.1, If Index : 2(S)
 -> 10.20.1.2, If Index : 2(S)
 -> 10.20.1.4, If Index : 2(S)
 -> 10.20.1.6, If Index : 2(S)
ResigEligib*: False
LastResignal: n/a                               CSPF Metric : 3000
===============================================================================
* indicates that the corresponding row element may have been truncated.


*A:Dut-A# show router mpls lsp "AtoL1" path detail
===============================================================================
MPLS LSP AtoL1 Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
    A - ABR
===============================================================================
-------------------------------------------------------------------------------
LSP AtoL1 Path empty
-------------------------------------------------------------------------------
LSP Name    : AtoL1                             Path LSP ID : 13316
From        : 10.20.1.1                         To          : 10.20.1.12
Adm State   : Up                                Oper State  : Up
Path Name   : empty                             Path Type   : Primary
Path Admin  : Up                                Path Oper   : Up
OutInterface: 1/1/1                             Out Label   : 131069
Path Up Time: 0d 01:19:46                       Path Dn Time: 0d 00:00:00
Retry Limit : 0                                 Retry Timer : 20 sec
```

```
RetryAttempt: 0                                 NextRetryIn : 0 sec

Adspec      : Disabled                          Oper Adspec : Disabled
CSPF        : Enabled                           Oper CSPF   : Enabled
Least Fill  : Disabled                          Oper LeastF*: Disabled
FRR         : Enabled                           Oper FRR    : Enabled
FRR NodePro*: Enabled                           Oper FRR NP : Enabled
FR Hop Limit: 6                                 Oper FRHopL*: 6
FR Prop Adm*: Disabled                          Oper FRProp*: Disabled
Prop Adm Grp: Enabled                           Oper PropAG : Enabled
Inter-area  : True

Neg MTU     : 1496                              Oper MTU    : 1496
Bandwidth   : 1 Mbps                            Oper Bw     : 1 Mbps
Hop Limit   : 255                               Oper HopLim*: 255
Record Route: Record                            Oper RecRou*: Record
Record Label: Record                            Oper RecLab*: Record
SetupPriori*: 7                                 Oper SetupP*: 7
Hold Priori*: 0                                 Oper HoldPr*: 0
Class Type  : 0                                 Oper CT     : 0
Backup CT   : None
MainCT Retry: n/a
    Rem     :
MainCT Retry: 0
    Limit   :
Include Grps:                                   Oper InclGr*:
None                                           None
Exclude Grps:                                   Oper ExclGr*:
None                                           None

Adaptive    : Enabled                           Oper Metric : 1500
Preference  : n/a
Path Trans  : 1                                 CSPF Queries: 3
Failure Code: noError                           Failure Node: n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.10.1.1(10.20.1.1) @ n                    Record Label        : N/A
-> 10.10.1.2(10.20.1.2) @ n                    Record Label        : 131069
-> 10.10.5.4(10.20.1.4) @ n                    Record Label        : 131069
-> 10.20.1.7(10.20.1.7) @ n                    Record Label        : 131069
-> 10.10.17.7  @ n                             Record Label        : 131069
-> 10.20.1.9(10.20.1.9) @                      Record Label        : 131069
-> 10.10.25.9  @                               Record Label        : 131069
-> 10.20.1.12(10.20.1.12)                       Record Label        : 131068
-> 10.10.33.12                                  Record Label        : 131068
ComputedHops:
    10.10.1.1(S)
-> 10.10.1.2(S)
-> 10.10.5.4(SA)
-> 10.20.1.12(L)
ResigEligib*: False
LastResignal: n/a                               CSPF Metric : 1500
===============================================================================
* indicates that the corresponding row element may have been truncated.


*A:Dut-C# show router mpls lsp detail
===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
```

```
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : to_D_10.20.1.4_viaBD
LSP Type    : RegularLsp                        LSP Tunnel ID  : 1
From        : 10.20.1.3                         To             : 10.20.1.4
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 00:05:38                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : 1500
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Disabled                          Oper FR        : Disabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : 0                                 Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
IGP Shortcut: Enabled                           BGP Shortcut   : Enabled
IGP LFA     : Disabled                          IGP Rel Metric : -1
BGPTransTun : Enabled
Oper Metric : 20
Prop Adm Grp: Disabled

Primary(a)  : to_D_10.20.1.4_viaBD              Up Time        : 0d 00:05:38
Bandwidth   : 0 Mbps
===============================================================================
*A:Dut-C#


*A:Dut-A# show router mpls lsp "AtoL1" detail
===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : AtoL1
LSP Type    : RegularLsp                        LSP Tunnel ID  : 1
From        : 10.20.1.1                         To             : 10.20.1.12
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 01:19:30                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 20 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : 1496
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 6
FR Bandwidth: 0 Mbps                            FR Node Protect: Enabled
FR Object   : Enabled                           FR Prop Adm Grp: Disabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : 0                                 Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
```

```
Auto BW     : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
IGP Shortcut: Enabled                           BGP Shortcut   : Enabled
IGP LFA     : Disabled                          IGP Rel Metric : Disabled
BGPTransTun : Enabled
Oper Metric : 1500
Prop Adm Grp: Enabled

Primary(a)  : empty                             Up Time        : 0d 01:19:30
Bandwidth   : 1 Mbps
===============================================================================


*A:Dut-A# show router mpls lsp "AtoL1" path detail
===============================================================================
MPLS LSP AtoL1 Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
    A - ABR
===============================================================================
-------------------------------------------------------------------------------
LSP AtoL1 Path empty
-------------------------------------------------------------------------------
LSP Name    : AtoL1                               Path LSP ID : 13316
From        : 10.20.1.1                           To          : 10.20.1.12
Adm State   : Up                                  Oper State  : Up
Path Name   : empty                               Path Type   : Primary
Path Admin  : Up                                  Path Oper   : Up
OutInterface: 1/1/1                               Out Label   : 131069
Path Up Time: 0d 01:19:46                         Path Dn Time: 0d 00:00:00
Retry Limit : 0                                   Retry Timer : 20 sec
RetryAttempt: 0                                   NextRetryIn : 0 sec

Adspec      : Disabled                            Oper Adspec : Disabled
CSPF        : Enabled                             Oper CSPF   : Enabled
Least Fill  : Disabled                            Oper LeastF*: Disabled
FRR         : Enabled                             Oper FRR    : Enabled
FRR NodePro*: Enabled                             Oper FRR NP : Enabled
FR Hop Limit: 6                                   Oper FRHopL*: 6
FR Prop Adm*: Disabled                            Oper FRProp*: Disabled
Prop Adm Grp: Enabled                             Oper PropAG : Enabled
Inter-area  : True

Neg MTU     : 1496                                Oper MTU    : 1496
Bandwidth   : 1 Mbps                              Oper Bw     : 1 Mbps
Hop Limit   : 255                                 Oper HopLim*: 255
Record Route: Record                              Oper RecRou*: Record
Record Label: Record                              Oper RecLab*: Record
SetupPriori*: 7                                   Oper SetupP*: 7
Hold Priori*: 0                                   Oper HoldPr*: 0
Class Type  : 0                                   Oper CT     : 0
Backup CT   : None
MainCT Retry: n/a
    Rem     :
MainCT Retry: 0
    Limit   :
Include Grps:                                     Oper InclGr*:
```

```
None                                            None
Exclude Grps:                                     Oper ExclGr*:
None                                            None

Adaptive    : Enabled                             Oper Metric : 1500
Preference  : n/a
Path Trans  : 1                                   CSPF Queries: 3
Failure Code: noError                             Failure Node: n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.10.1.1(10.20.1.1) @ n                      Record Label        : N/A
-> 10.10.1.2(10.20.1.2) @ n                     Record Label        : 131069
-> 10.10.5.4(10.20.1.4) @ n                     Record Label        : 131069
-> 10.20.1.7(10.20.1.7) @ n                     Record Label        : 131069
-> 10.10.17.7  @ n                              Record Label        : 131069
-> 10.20.1.9(10.20.1.9) @                       Record Label        : 131069
-> 10.10.25.9  @                                Record Label        : 131069
-> 10.20.1.12(10.20.1.12)                       Record Label        : 131068
-> 10.10.33.12                                  Record Label        : 131068
ComputedHops:
    10.10.1.1(S)
-> 10.10.1.2(S)
-> 10.10.5.4(SA)
-> 10.20.1.12(L)
ResigEligib*: False
LastResignal: n/a                                 CSPF Metric : 1500
===============================================================================
* indicates that the corresponding row element may have been truncated.

A:sim1>config>router>mpls>lsp$ show router mpls lsp path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
===============================================================================
-------------------------------------------------------------------------------
LSP l1 Path 1
-------------------------------------------------------------------------------
LSP Name    : l1                                  Path LSP ID : 30208
From        : 10.20.1.1                           To          : 10.20.1.3
Adm State   : Up                                  Oper State  : Down
Path Name   : 1                                   Path Type   :
Primary
Path Admin  : Up                                  Path Oper   : Down
OutInterface: n/a                                 Out Label   : n/a
Path Up Time: 0d 00:00:00                         Path Dn Time: 0d 00:00:02
Retry Limit : 0                                   Retry Timer : 30 sec
RetryAttempt: 0                                   NextRetryIn : 7 sec (Fast)
SetupPriori*: 7                                   Hold Priori*: 0
Preference  : n/a
Bandwidth   : No Reservation                      Oper Bw     : 0 Mbps
Hop Limit   : 255                                 Class Type  : 0
Backup CT   : None
MainCT Retry: n/a                                 MainCT Retry: 0
    Rem     :                                         Limit   :
Oper CT     : None
```

```
Record Route: Record                                Record Label: Record
Oper MTU    : 0                                     Neg MTU     : 0
Adaptive    : Enabled                               Oper Metric : 65535
Include Grps:                                       Exclude Grps:
None                                               None
Path Trans  : 2                                     CSPF Queries: 0
Failure Code: noError                               Failure Node: n/a
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    No Hops Specified
ResigEligib*: False
LastResignal: n/a                                   CSPF Metric : 0
===============================================================================

*A:# show router mpls lsp path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
===============================================================================
-------------------------------------------------------------------------------
LSP to_C Path 1000_S
-------------------------------------------------------------------------------
LSP Name    : to_C                                  Path LSP ID : 17926
From        : 10.20.1.2                             To          : 10.20.1.3
Adm State   : Up                                    Oper State  : Up
Path Name   : 1000_S                                Path Type   : Standby
Path Admin  : Up                                    Path Oper   : Up
OutInterface: 1/1/2                                 Out Label   : 131068
Path Up Time: 0d 00:06:46                           Path Dn Time: 0d 00:00:00
Retry Limit : 0                                     Retry Timer : 20 sec
RetryAttempt: 0                                     NextRetryIn : 0 sec

Adspec      : Disabled                              Oper Adspec : Disabled
CSPF        : Enabled                               Oper CSPF   : Enabled
CSPF-FL     : Enabled                               Oper CSPF-FL: Enabled
Least Fill  : Disabled                              Oper LeastF*: Enabled
FRR NodePro*: Disabled                              Oper FRR NP : Enabled
Prop Adm Grp: Disabled                              Oper PropAG : Disabled
Neg MTU    : 1496                                   Oper MTU    : 1496
Bandwidth   : No Reservation                        Oper Bw     : 0 Mbps
Hop Limit   : 255                                   Oper HopLim*: 255
Record Route: Record                                Oper RecRou*: Record
Record Label: Record                                Oper RecLab*: Record
SetupPriori*: 7                                     Oper SetupP*: 7
Hold Priori*: 0                                     Oper HoldPr*: 0
Class Type  : 0
Backup CT   : None                                  Oper CT     : 0
MainCT Retry: n/a
    Rem     :
MainCT Retry: n/a
    Limit   :
Include Grps:                                       Oper InclGr*:
    silver                                              silver
Exclude Grps:                                       Oper ExclGr*:
    None                                                None
```

```
Adaptive    : Enabled                           Oper Metric : 2999
Preference  : 255
Path Trans  : 0                                 CSPF Queries: 0
Failure Code: noError                           Failure Node: n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.10.4.2(10.20.1.2)                        Record Label    : N/A
 -> 10.10.4.4(10.20.1.4)                        Record Label    : 131068
 -> 10.10.6.5(10.20.1.5)                        Record Label    : 131068
 -> 10.10.5.3(10.20.1.3)                        Record Label    : 131065
ComputedHops:
    10.10.4.2(S)       -> 10.10.4.4(S)       -> 10.10.6.5(S)
 -> 10.10.5.3(S)
Srlg        : Disabled
SrlgDisjoint: False
ResigEligib*: False
LastResignal: n/a                               CSPF Metric : 2999
===============================================================================


*A:Dut-C>config>router>mpls>lsp$ /show router mpls lsp  path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
===============================================================================
-------------------------------------------------------------------------------
LSP 2 Path 1
-------------------------------------------------------------------------------
LSP Name    : 2                                 Path LSP ID : 54272
From        : 10.20.1.3                         To          : 10.20.1.1
Adm State   : Up                                Oper State  : Down
Path Name   : 1                                 Path Type   : Primary
Path Admin  : Up                                Path Oper   : In Progress
OutInterface: n/a                               Out Label   : n/a
Path Up Time: 0d 00:00:00                       Path Dn Time: 0d 00:00:13
Retry Limit : 0                                 Retry Timer : 30 sec
RetryAttempt: 1                                 NextRetryIn : 0 sec
Timeout In  : 19 sec

Adspec      : Disabled                          Oper Adspec : N/A
CSPF        : Disabled                          Oper CSPF   : N/A
CSPF-FL     : Disabled                          Oper CSPF-FL: N/A
Least Fill  : Disabled                          Oper LeastF*: N/A
FRR         : Disabled                          Oper FRR    : N/A
FR Hop Limit: 16                                Oper FRHopL*: N/A
Prop Adm Grp: Disabled                          Oper PropAG : N/A

Neg MTU     : 0                                 Oper MTU    : N/A
Bandwidth   : No Reservation                    Oper Bw     : N/A
Hop Limit   : 255                               Oper HopLim*: N/A
Record Route: Record                            Oper RecRou*: N/A
Record Label: Record                            Oper RecLab*: N/A
SetupPriori*: 7                                 Oper SetupP*: N/A
Hold Priori*: 0                                 Oper HoldPr*: N/A
```

```
Class Type  : 0                                    Oper CT     : N/A
Backup CT   : None
MainCT Retry: Infinite
    Rem     :
MainCT Retry: 0
    Limit   :
Include Grps:                                      Oper InclGr*:
None                                              N/A
Exclude Grps:                                      Oper ExclGr*:
None                                              N/A

Adaptive    : Enabled                              Oper Metric : 65535
Preference  : n/a
Path Trans  : 0                                    CSPF Queries: 0
Failure Code: noError                              Failure Node: n/a
ExplicitHops:
    10.10.2.1(S)
Actual Hops :
    No Hops Specified
ResigEligib*: False
LastResignal: n/a                                  CSPF Metric : 0
===============================================================================
* indicates that the corresponding row element may have been truncated.


A:sim1>config>router>mpls>lsp$ show router mpls lsp path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
===============================================================================
-------------------------------------------------------------------------------
LSP l1 Path 1
-------------------------------------------------------------------------------
LSP Name    : l1                                   Path LSP ID : 30208
From        : 10.20.1.1                            To          : 10.20.1.3
Adm State   : Up                                   Oper State  : Down
Path Name   : 1                                    Path Type   : Primary
Path Admin  : Up                                   Path Oper   : Down
OutInterface: n/a                                  Out Label   : n/a
Path Up Time: 0d 00:00:00                          Path Dn Time: 0d 00:00:02
Retry Limit : 0                                    Retry Timer : 30 sec
RetryAttempt: 0                                    NextRetryIn : 7 sec (Fast)
SetupPriori*: 7                                    Hold Priori*: 0
Preference  : n/a
Bandwidth   : No Reservation                       Oper Bw     : 0 Mbps
Hop Limit   : 255                                  Class Type  : 0
Backup CT   : None
MainCT Retry: n/a                                  MainCT Retry: 0
    Rem     :                                          Limit   :
Oper CT     : None
Record Route: Record                               Record Label: Record
Oper MTU    : 0                                    Neg MTU     : 0
Adaptive    : Enabled                              Oper Metric : 65535
Include Grps:                                      Exclude Grps:
None                                              None
Path Trans  : 2                                    CSPF Queries: 0
```

```
Failure Code: noError                              Failure Node: n/a
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    No Hops Specified
ResigEligib*: False
LastResignal: n/a                                  CSPF Metric : 0
===============================================================================
```

```
*A:SRU4>config>router>mpls# show router mpls lsp path
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - loose
===============================================================================
ExplicitHops:
    10.20.1.3(L)       -> 10.20.1.4(S)
Actual Hops :
    10.10.1.1(10.20.1.1)                           Record Label    : N/A
 -> 10.10.1.2(10.20.1.2)                           Record Label    : 131071
 -> 10.10.5.3(10.20.1.3)                           Record Label    : 131071
 -> 10.10.7.4(10.20.1.4)                           Record Label    : 131071
 -> 10.10.8.5(10.20.1.5)                           Record Label    : 131071
ComputedHops:
    10.10.1.1(S)       -> 10.10.1.2(S)       -> 10.10.5.3(S)
 -> 10.20.1.4(S)       -> 10.20.1.5(L)
===============================================================================
```

```
*A:SRU4>config>router>mpls# show router mpls lsp
===============================================================================
MPLS LSPs (Originating)
===============================================================================
LSP Name                          To                 Fastfail     Adm   Opr
                                                     Config
-------------------------------------------------------------------------------
to_110_20_1_1_cspf                110.20.1.1         No           Up    Up
to_110_20_1_2_cspf                110.20.1.2         No           Up    Dwn
to_110_20_1_3_cspf                110.20.1.3         No           Up    Up
to_110_20_1_4_cspf                110.20.1.4         No           Up    Dwn
to_110_20_1_5_cspf                110.20.1.5         No           Up    Up
to_110_20_1_6_cspf                110.20.1.6         No           Up    Dwn
to_110_20_1_110_cspf              110.20.1.110       No           Up    Up
to_10_8_100_15_cspf               10.8.100.15        No           Up    Dwn
to_10_20_1_20_cspf                10.20.1.20         No           Up    Up
to_10_20_1_22_cspf                10.20.1.22         No           Up    Up
to_10_100_1_1_cspf                10.100.1.1         No           Up    Dwn
to_110_20_1_1_cspf_2              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_3              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_4              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_5              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_6              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_7              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_8              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_9              110.20.1.1         No           Up    Up
to_110_20_1_1_cspf_10             110.20.1.1         No           Up    Up
```

```
to_110_20_1_1_cspf_11              110.20.1.1          No           Up    Up
to_110_20_1_1_cspf_12              110.20.1.1          No           Up    Up
to_110_20_1_1_cspf_13              110.20.1.1          No           Up    Up
to_110_20_1_1_cspf_14              110.20.1.1          No           Up    Up
to_110_20_1_1_cspf_15              110.20.1.1          No           Up    Up
...
-------------------------------------------------------------------------------
LSPs : 201
===============================================================================
*A:SRU4>config>router>mpls#
```

Label	Description
Auto BW	Enabled – Auto-bandwidth adjustment is configured on this LSP.
AB OpState	Up – Auto-bandwidth is operationally enabled on this LSP Down – Auto-bandwidth is operationally disabled on this LSP
Auto BW Min	The minimum bandwidth of the LSP that auto-bandwidth can request (in Mbps).
Auto BW Max	The maximum bandwidth of the LSP that auto-bandwidth can request (in Mbps).
AB Up Thresh	The percent threshold for increasing LSP bandwidth.
AB Down Thresh	The percent threshold for decreasing LSP bandwidth.
AB Up BW	The absolute bandwidth threshold for increasing LSP bandwidth (in Mbps).
AB Down BW	The absolute bandwidth threshold for decreasing LSP bandwidth (in Mbps).
AB Coll Intv	The auto-bandwidth collection interval.
AB Adj Mul	The adjust-multiplier for this LSP (may be configured or inherited).
AB Samp Mul	The sample-multiplier for this LSP (may be configured or inherited).
AB Adj Time	The adjust-multiplier times the collection-interval (in Mins).
AB Sample Time	The sample-multiplier times the collection-interval (in Mins).
AB Adj Cnt	The adjust count (number of whole collection intervals since the start of the current adjust interval).
AB Samp Cnt	The sample count (number of whole collection intervals since the start of the current sample interval).
AB Last Adj	The system time of the last auto-bandwidth adjustment.

Label	Description (Continued)
AB Next Adj	The approximate remaining time in the current adjust interval (adjust-multiplier – adjust count) times the collection interval (in Mins). This overstates the actual remaining time because the elapsed time in the current collection interval is not accounted for.
AB Adj Cause	The cause of the last auto-bandwidth adjustment: • none – no adjustment has occurred • manual • adj-count • overflow
AB Max AvgR*	The maximum average data rate in any sample interval of the current adjust interval.
AB Lst AvgR*	The average data rate measured in the sample interval that ended most recently.
AB Ovfl Lmt	The configured value of the auto-bandwidth overflow-limit.
AB Ovfl Cnt	The number of overflow samples since the last reset.
ABOvflThres	The percent threshold for declaring an overflow sample.
AB Ovfl BW	The absolute bandwidth threshold for declaring an overflow sample (in Mbps).
AB Monitor BW	True – monitor bandwidth is enabled on the LSP. False – monitor bandwidth is not enabled on the LSP.

```
*A:SRU4>config>router>mpls#  show router mpls lsp detail
===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : to_110_20_1_1_cspf
LSP Type    : RegularLsp                        LSP Tunnel ID  : 1
From        : 110.20.1.4
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 01:47:49                       LSP Down Time  : 0d 00:00:00
Transitions : 11                                Path Changes   : 11
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : 1500
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Disabled                          Oper FR        : Disabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : 0                                 Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
```

```
IGP Shortcut: Enabled
Oper Metric : 1001

Primary(a)  : to_110_20_1_1                    Up Time        : 0d 01:47:49
Bandwidth   : 0 Mbps
-------------------------------------------------------------------------------
...
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : to_10_100_1_1_cspf_20
LSP Type    : RegularLsp                       LSP Tunnel ID  : 201
From        : 110.20.1.4
Adm State   : Up                               Oper State     : Down
LSP Up Time : 0d 00:00:00                      LSP Down Time  : 0d 13:30:49
Transitions : 0                                Path Changes   : 0
Retry Limit : 0                                Retry Timer    : 30 sec
Signaling   : RSVP                             Resv. Style    : SE
Hop Limit   : 255                              Negotiated MTU : 0
Adaptive    : Enabled                          ClassType      : 0
FastReroute : Disabled                         Oper FR        : Disabled
CSPF        : Enabled                          ADSPEC         : Disabled
Metric      : 0                                Use TE metric  : Disabled
Include Grps:                                  Exclude Grps   :
None                                           None
Least Fill  : Disabled
LdpOverRsvp : Enabled                          VprnAutoBind   : Enabled
IGP Shortcut: Enabled
Oper Metric : 65535

Primary     : to_10_100_1_1                    Down Time      : 0d 13:30:49
Bandwidth   : 0 Mbps
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls lsp path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
===============================================================================
-------------------------------------------------------------------------------
LSP to_110_20_1_1_cspf Path to_110_20_1_1
-------------------------------------------------------------------------------
LSP Name    : to_110_20_1_1_cspf                 Path LSP ID : 12856
From        : 110.20.1.4                         To          : 110.20.1.1
Adm State   : Up                                 Oper State  : Up
Path Name   : to_110_20_1_1                      Path Type   : Primary
Path Admin  : Up                                 Path Oper   : Up
OutInterface: 3/2/1                              Out Label   : 336302
Path Up Time: 0d 01:43:19                        Path Dn Time: 0d 00:00:00
Retry Limit : 0                                  Retry Timer : 30 sec
RetryAttempt: 0                                  NextRetryIn : 0 sec
SetupPriori*: 7                                  Hold Priori*: 0
Preference  : n/a
Bandwidth   : No Reservation                     Oper Bw     : 0 Mbps
Hop Limit   : 255                                Class Type  : 0
```

```
Backup CT   : None
MainCT Retry: n/a                                   MainCT Retry: 0
    Rem     :                                           Limit   :
Oper CT     : 0
Record Route: Record                                Record Label: Record
Oper MTU    : 1500                                  Neg MTU     : 1500
Adaptive    : Enabled                               Oper Metric : 1001
Include Grps:                                       Exclude Grps:
None                                               None
Path Trans  : 13                                    CSPF Queries: 56
Failure Code: noError                               Failure Node: n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.100.30.4(110.20.1.4)                         Record Label    : N/A
 -> 10.100.30.20(10.20.1.20)                        Record Label    : 336302
 -> 10.100.14.1(110.20.1.1)                         Record Label    : 126325
ComputedHops:
    10.100.30.4     -> 10.100.30.20    -> 10.100.14.1
ResigEligib*: False
LastResignal: n/a                                   CSPF Metric : 1001
Last MBB    :
 MBB Type   : TimerBasedResignal                    MBB State   : Fail
 Ended At   : 03/04/2010 08:53:40                   Old Metric  : 0
-------------------------------------------------------------------------------
...
LSP to_10_100_1_1_cspf_20 Path to_10_100_1_1
-------------------------------------------------------------------------------
LSP Name    : to_10_100_1_1_cspf_20                 Path LSP ID : 40960
From        : 110.20.1.4                            To          : 10.100.1.1
Adm State   : Up                                    Oper State  : Down
Path Name   : to_10_100_1_1                         Path Type   : Primary
Path Admin  : Up                                    Path Oper   : Down
OutInterface: n/a                                   Out Label   : n/a
Path Up Time: 0d 00:00:00                           Path Dn Time: 0d 13:26:06
Retry Limit : 0                                     Retry Timer : 30 sec
RetryAttempt: 1612                                  NextRetryIn : 19 sec
SetupPriori*: 7                                     Hold Priori*: 0
Preference  : n/a
Bandwidth   : No Reservation                        Oper Bw     : 0 Mbps
Hop Limit   : 255                                   Class Type  : 0
Backup CT   : None
MainCT Retry: Infinite                              MainCT Retry: 0
    Rem     :                                           Limit   :
Oper CT     : None
Record Route: Record                                Record Label: Record
Oper MTU    : 0                                     Neg MTU     : 0
Adaptive    : Enabled                               Oper Metric : 65535
Include Grps:                                       Exclude Grps:
None                                               None
Path Trans  : 0                                     CSPF Queries: 0
Failure Code: noCspfRouteOwner                      Failure Node: 110.20.1.4
ExplicitHops:
    No Hops Specified
Actual Hops :
    No Hops Specified
ComputedHops:
    No Hops Specified
ResigEligib*: False
LastResignal: n/a                                   CSPF Metric : 0
===============================================================================
```

```
* indicates that the corresponding row element may have been truncated.
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls#   show router mpls lsp "to_110_20_1_1_cspf"
===============================================================================
MPLS LSPs (Originating)
===============================================================================
LSP Name                            To                  Fastfail     Adm   Opr
                                                        Config
-------------------------------------------------------------------------------
to_110_20_1_1_cspf                  110.20.1.1          No           Up    Up
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls#   show router mpls lsp "to_110_20_1_1_cspf" detail
===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : to_110_20_1_1_cspf
LSP Type    : RegularLsp                        LSP Tunnel ID  : 1
From        : 110.20.1.4
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 01:47:02                       LSP Down Time  : 0d 00:00:00
Transitions : 11                                Path Changes   : 11
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : 1500
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Disabled                          Oper FR        : Disabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : 0                                 Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
IGP Shortcut: Enabled
Oper Metric : 1001

Primary(a)  : to_110_20_1_1                     Up Time        : 0d 01:47:02
Bandwidth   : 0 Mbps
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls lsp detail to 110.20.1.2
===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : 1
LSP Type    : RegularLsp                        LSP Tunnel ID  : 1
From        : 0.0.0.0
```

```
Adm State   : Down                              Oper State     : Down
LSP Up Time : 0d 00:00:00                      LSP Down Time  : 0d 00:00:07
Transitions : 0                                Path Changes   : 0
Retry Limit : 0                                Retry Timer    : 30 sec
Signaling   : RSVP                             Resv. Style    : SE
Hop Limit   : 255                              Negotiated MTU : 0
Adaptive    : Enabled                          ClassType      : 0
FastReroute : Disabled                         Oper FR        : Disabled
CSPF        : Disabled                         ADSPEC         : Disabled
Metric      : 0
Include Grps:                                  Exclude Grps   :
None                                           None
Least Fill  : Disabled

Auto BW     : Enabled                          AB OpState     : Down
Auto BW Min : 0 Mbps                           Auto BW Max    : 100000 Mbps
AB Up Thresh: 5 percent                        AB Down Thresh : 5 percent
AB Up BW    : 0 Mbps                           AB Down BW     : 0 Mbps
AB Curr BW  : 0 Mbps                           AB Samp Intv   : 0
AB Adj Mul  : 288+                             AB Samp Mul    : 1+
AB Adj Time : 0 Mins                           AB Samp Time   : 0 Mins
AB Adj Cnt  : 0                                AB Samp Cnt    : 0
AB Last Adj : n/a                              AB Next Adj    : 0 Mins
ABMaxAvgRt  : 0 Mbps                           AB Lst AvgRt   : 0 Mbps
AB Ovfl Lmt : 0                                AB Ovfl Cnt    : 0
ABOvflThres : 0 percent                        AB Ovfl BW     : 0
AB Adj Cause: none                             AB Monitor BW  : False
LdpOverRsvp : Enabled                          VprnAutoBind   : Enabled
IGP Shortcut: Enabled
Oper Metric : 65535

+ indicates inherited values
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls#    show router mpls lsp count
===============================================================================
MPLS LSP Count
===============================================================================
                    Originate           Transit             Terminate
-------------------------------------------------------------------------------
Static LSPs         0                   136                 0
Dynamic LSPs        140                 421                 1620
Detour LSPs         0                   0                   0
P2MP S2Ls           0                   0                   0
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls lsp path mbb
===============================================================================
MPLS LSP Paths
===============================================================================
-------------------------------------------------------------------------------
LSP to_110_20_1_1_cspf Path to_110_20_1_1
-------------------------------------------------------------------------------
LastResignal: n/a                                CSPF Metric : 1001
Last MBB    :
 MBB Type   : TimerBasedResignal                 MBB State   : Fail
 Ended At   : 03/04/2010 09:23:58                Old Metric  : 0
```

```
-------------------------------------------------------------------------------
LSP to_110_20_1_2_cspf Path to_110_20_1_2
-------------------------------------------------------------------------------
LastResignal: 03/04/2010 09:23:58               CSPF Metric : 65535
-------------------------------------------------------------------------------
LSP to_110_20_1_3_cspf Path to_110_20_1_3
-------------------------------------------------------------------------------
LastResignal: n/a                               CSPF Metric : 1001
Last MBB    :
 MBB Type   : TimerBasedResignal                MBB State   : Fail
 Ended At   : 03/04/2010 09:23:58               Old Metric  : 0
-------------------------------------------------------------------------------
LSP to_110_20_1_4_cspf Path to_110_20_1_4
-------------------------------------------------------------------------------
LastResignal: n/a                               CSPF Metric : 0
-------------------------------------------------------------------------------
LSP to_110_20_1_5_cspf Path to_110_20_1_5
-------------------------------------------------------------------------------
...
-------------------------------------------------------------------------------
LastResignal: n/a                               CSPF Metric : 0
-------------------------------------------------------------------------------
LSP to_10_100_1_1_cspf_19 Path to_10_100_1_1
-------------------------------------------------------------------------------
LastResignal: n/a                               CSPF Metric : 0
-------------------------------------------------------------------------------
LSP to_10_100_1_1_cspf_20 Path to_10_100_1_1
-------------------------------------------------------------------------------
LastResignal: n/a                               CSPF Metric : 0
===============================================================================
*A:SRU4>config>router>mpls#

In Prog MBB :
 MBB Type   : SoftPreemption                    NextRetryIn : 19 sec
 Started At : 12/08/2008 22:21:11               RetryAttempt: 0
 FailureCode: noError                           Failure Node: n/a
===============================================================================
*A:Dut-B#


*A:SRU4>config>router>mpls# show router mpls lsp transit
===============================================================================
MPLS LSPs (Transit)
===============================================================================
Legend :  @ - Active Detour
===============================================================================
From            To              In I/F   Out I/F  State LSP Name
-------------------------------------------------------------------------------
110.20.1.5      10.20.1.22      3/2/1    3/2/7    Up    to_10_20_1_22_cspf::to*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_3::*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_4::*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_2::*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_20:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_18:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_19:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_17:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_16:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_15:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_13:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_14:*
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_12:*
```

```
110.20.1.5      10.20.1.20      3/2/7    3/2/1    Up    to_10_20_1_20_cspf_10:*
...
110.20.1.3      10.20.1.22      aps-1    3/2/7    Up    to_10_20_1_22_cspf_6::*
110.20.1.3      10.20.1.22      aps-1    3/2/7    Up    to_10_20_1_22_cspf::to*
110.20.1.3      10.20.1.22      aps-1    3/2/7    Up    to_10_20_1_22_cspf_9::*
-------------------------------------------------------------------------------
LSPs : 520
===============================================================================
* indicates that the corresponding row element may have been truncated.
*A:SRU4>config>router>mpls#
*A:SRU4>config>router>mpls# show router mpls lsp terminate
===============================================================================
MPLS LSPs (Terminate)
===============================================================================
Legend :  @ - Active Detour
===============================================================================
From            To              In I/F   Out I/F  State LSP Name
-------------------------------------------------------------------------------
110.20.1.5      110.20.1.4      3/2/1    n/a      Up    b4-1::b4-1
110.20.1.5      110.20.1.4      3/2/7    n/a      Up    gsr::gsr
10.20.1.22      110.20.1.4      3/2/7    n/a      Up    gsr2_t10
110.20.1.6      110.20.1.4      3/2/3:10 n/a      Up    1::2
110.20.1.6      110.20.1.4      3/2/3:3  n/a      Up    1::stby
110.20.1.6      110.20.1.4      3/2/3:10 n/a      Up    2::2
110.20.1.6      110.20.1.4      3/2/3:6  n/a      Up    2::stby
110.20.1.6      110.20.1.4      3/2/3:10 n/a      Up    3::2
110.20.1.6      110.20.1.4      3/2/3:6  n/a      Up    3::stby
...
110.20.1.3      110.20.1.4      aps-1    n/a      Up    to_110_20_1_4_cspf_20:*
110.20.1.3      110.20.1.4      aps-1    n/a      Up    to_110_20_1_4_cspf_4::*
-------------------------------------------------------------------------------
LSPs : 1603
===============================================================================
* indicates that the corresponding row element may have been truncated.
*A:SRU4>config>router>mpls#

*A:SRU4>config>router>mpls# show router mpls lsp terminate detail
===============================================================================
MPLS LSPs (Terminate) (Detail)
===============================================================================
-------------------------------------------------------------------------------
LSP b4-1::b4-1
-------------------------------------------------------------------------------
From                : 110.20.1.5            To            : 110.20.1.4
State               : Up
SetupPriority       : 7                     Hold Priority : 0
Class Type          : 0
In Interface        : 3/2/1                 In Label      : 131071
Previous Hop        : 10.100.30.20
-------------------------------------------------------------------------------
LSP gsr::gsr
-------------------------------------------------------------------------------
From                : 110.20.1.5            To            : 110.20.1.4
State               : Up
SetupPriority       : 7                     Hold Priority : 0
Class Type          : 0
In Interface        : 3/2/7                 In Label      : 128547
Previous Hop        : 160.60.60.2
-------------------------------------------------------------------------------
...
-------------------------------------------------------------------------------
```

```
From                : 110.20.1.3            To            : 110.20.1.4
State               : Up
SetupPriority       : 7                     Hold Priority : 0
Class Type          : 0
In Interface        : aps-1                 In Label      : 130409
Previous Hop        : 104.104.0.3
===============================================================================
*A:SRU4>config>router>mpls#

*A:Dut-C>config>router>mpls>lsp# show router mpls lsp "N1.N2.3" detail

===============================================================================
MPLS LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : N1.N2.3
LSP Type    : RegularLsp                        LSP Tunnel ID  : 132
From        : 1.0.0.1                           To             : 1.0.0.2
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 00:01:07                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 2
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : 1500
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Disabled                          Oper FR        : Disabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : 9                                 Use TE metric  : Disabled
Load Balanc*: 100
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled

Revert Timer: Disabled                          Next Revert In : N/A
Auto BW     : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
IGP Shortcut: Enabled                           BGP Shortcut   : Enabled
IGP LFA     : Disabled                          IGP Rel Metric : Disabled
BGPTransTun : Enabled
Oper Metric : 9
Prop Adm Grp: Disabled

Primary(a)  : path.N1.N2.3                      Up Time        : 0d 00:01:04
Bandwidth   : 0 Mbps
Secondary   : path.N1.N2.4                      Down Time      : 0d 00:01:00
Bandwidth   : 0 Mbps
===============================================================================

*A:SetupCLI# show router mpls lsp "lsp_1" path "500" detail

===============================================================================
MPLS LSP lsp_1 Path 500 (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
    A - ABR
```

```
===============================================================================
-------------------------------------------------------------------------------
LSP lsp_1 Path 500
-------------------------------------------------------------------------------
LSP Name          : lsp_1
Path LSP ID       : 38400
From              : 10.10.1.1             To                   : 10.10.1.2
Admin State       : Up                    Oper State           : Down
Path Name         : 500                   Path Type            : Primary
Path Admin        : Up                    Path Oper            : Down
Out Interface     : n/a                   Out Label            : n/a
Path Up Time      : 0d 00:00:00           Path Down Time       : 0d 00:00:43
Retry Limit       : 0                     Retry Timer          : 30 sec
Retry Attempt     : 2                     Next Retry In        : 19 sec
BFD Template      : None                  BFD Ping Interval    : 60
BFD Enable        : FALSE

Adspec            : Disabled              Oper Adspec          : N/A
CSPF              : Disabled              Oper CSPF            : N/A
Least Fill        : Disabled              Oper LeastFill       : N/A
FRR               : Disabled              Oper FRR             : N/A
Prop Adm Grp      : Disabled              Oper Prop AG         : N/A
Inter-area        : N/A

Neg MTU           : 0                     Oper MTU             : N/A
Bandwidth         : No Reservation        Oper Bw              : N/A
Hop Limit         : 255                   Oper HopLimit        : N/A
Record Route      : Record                Oper Rec Route       : N/A
Record Label      : No Record             Oper Rec Label       : N/A
Setup Priority    : 7                     Oper Setup Priority  : N/A
Hold Priority     : 7                     Oper Hold Priority   : N/A
Class Type        : 7                     Oper CT              : N/A
Backup CT         : 5
MainCT Retry      : 500
    Rem           :
MainCT Retry      : 500
    Limit         :
Include Grps      :                       Oper InclGrps        :
None                                            N/A
Exclude Grps      :                       Oper ExclGrps        :
None                                            N/A

Adaptive          : Enabled               Oper Metric          : N/A
Preference        : n/a
Path Trans        : 0                     CSPF Queries         : 0
Failure Code      : noResourcesAvailable
Failure Node      : 9.1.255.255
Explicit Hops     :
    No Hops Specified
Actual Hops       :
    No Hops Specified
Resignal Eligible: False
Last Resignal     : n/a                   CSPF Metric          : N/A
===============================================================================
```

lsp-egress-stats

Syntax **lsp-egress-stats**
lsp-egress-stats *lsp-name*

Context show>router>mpls

Description This command displays MPLS LSP egress statistics information.

Output **Sample Output**

```
*A:Dut-C>config>router>mpls>lsp$ show router mpls lsp-egress-stats lsp "1"

===============================================================
MPLS LSP Egress Statistics
===============================================================
---------------------------------------------------------------
LSP Name      : 1
---------------------------------------------------------------
Collect Stats : Enabled                Accting Plcy. : Default
Adm State     : Up                     PSB Match     : True
FC BE
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC L2
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC AF
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC L1
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC H2
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC EF
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC H1
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
FC NC
InProf Pkts   : 0                      OutProf Pkts  : 0
InProf Octets : 0                      OutProf Octets: 0
===============================================================


*A:Dut-C# show router mpls lsp-egress-stats lsp "ipmsi-1-73728"

===============================================================
MPLS LSP Egress Statistics
===============================================================
---------------------------------------------------------------
LSP Name      : ipmsi-1-73728
---------------------------------------------------------------
Collect Stats : Enabled                Accting Plcy. : Default
Adm State     : Up                     PSB Match     : True
FC BE
InProf Pkts   : 0                      OutProf Pkts  : 0
```

```
InProf Octets : 0                       OutProf Octets: 0
FC L2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC AF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC EF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC NC
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
===============================================================
```

lsp-ingress-stats

Syntax **lsp-ingress-stats**
lsp-ingress-stats *ip-address* **lsp** *lsp-name*

Context show>router>mpls

Description This command displays MPLS LSP ingress statistics information.

Sample Output

```
*A:Dut-A# show router mpls lsp-ingress-stats lsp "1" sender 10.20.1.3

===============================================================
MPLS LSP Ingress Statistics
===============================================================
---------------------------------------------------------------
LSP Name      : 1
Sender        : 10.20.1.3
---------------------------------------------------------------
Collect Stats : Disabled                Accting Plcy. : None
Adm State     : Up                      PSB Match     : True
FC BE
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC AF
```

```
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC EF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC NC
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
===============================================================

*A:Dut-A# show router mpls lsp-ingress-stats lsp "ipmsi-1-73728" sender 10.20.1.3
===============================================================================
MPLS LSP Ingress Statistics
===============================================================================
-------------------------------------------------------------------------------
LSP Name      : ipmsi-1-73728
Sender        : 10.20.1.3
-------------------------------------------------------------------------------
Collect Stats : Disabled                Accting Plcy. : None
Adm State     : Up                      PSB Match     : True
FC BE
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC AF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC EF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC NC
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
===============================================================================


*A:Dut-A>config>router>mpls>ingr-stats# show router mpls lsp-ingress-stats
type p2mp active template-match

===============================================================================
MPLS LSP Ingress Statistics
```

```
===============================================================================
-------------------------------------------------------------------------------
LSP Name      : ipmsi-1-73728
Sender        : 10.20.1.3
-------------------------------------------------------------------------------
Collect Stats : Disabled                Accting Plcy. : None
Adm State     : Up                      PSB Match     : True
FC BE
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC AF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC L1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H2
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC EF
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC H1
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
FC NC
InProf Pkts   : 0                       OutProf Pkts  : 0
InProf Octets : 0                       OutProf Octets: 0
-------------------------------------------------------------------------------
LSP Statistics : 1
```

lsp-template

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

Context show>router>mpls

Description This command displays MPLS LSP template information.

Sample Output

```
*A:Dut-C# show router mpls lsp-template detail
===============================================================================
MPLS LSP Templates (Detail)
===============================================================================
-------------------------------------------------------------------------------
LSP Template : ipmsi
-------------------------------------------------------------------------------
Type               : P2MP               Admin State        : Up
Default Path       : path_ipmsi         Adaptive           : Enabled
Bandwidth          : 0 Mbps             Hop Limit          : 255
CSPF               : Enabled            Use TE metric      : Disabled
Include Groups     :                    Exclude Groups     :
```

```
None                                    None
FastReroute         : Enabled
FR Method           : Facility          FR Hop Limit       : 16
Record Route        : Record            Record Label       : Record
Retry Limit         : 0                 Retry Timer        : 30 sec
LSP Count           : 3                 Ref Count          : 3
===============================================================================
```

oam-template

Syntax **oam-template**

Context show>router>mpls>mpls-tp

Description This command displays MPLS-TP OAM template information.

Sample Output

```
*A:mlstp-dutA# show router mpls mpls-tp oam-template

===============================================================================
MPLS-TP OAM Templates
===============================================================================
Template Name : privatebed-oam-template Router ID     : 1
BFD Template  : privatebed-bfd-template Hold-Down Time: 0 centiseconds
                                        Hold-Up Time  : 20 deciseconds
===============================================================================
```

protection-template

Syntax **protection-template**

Context show>router>mpls>mpls-tp

Description This command displays MPLS-TP protection template information.

Sample Output

```
*A:mlstp-dutA# show router mpls mpls-tp protection-template

===============================================================================
MPLS-TP Protection Templates
===============================================================================
Template Name  : privatebed-protection-template  Router ID      : 1
Protection Mode: one2one                         Direction      : bidirectional
Revertive      : revertive                       Wait-to-Restore: 300sec
Rapid-PSC-Timer: 10ms                            Slow-PSC-Timer : 5sec
===============================================================================
```

status

Syntax **status**

Context show>router>mpls>mpls-tp

Description This command displays MPLS-TP system configuration information.

Sample Output

```
*A:mlstp-dutA# show router mpls mpls-tp status

===============================================================================
MPLS-TP Status
===============================================================================
Admin Status  : Up
Global ID     : 42                                Node ID       : 0.0.3.233
Tunnel Id Min : 1                                 Tunnel Id Max : 4096
===============================================================================
```

transit-path

Syntax **transit-path** [*path-name*] [**detail**]

Context show>router>mpls>mpls-tp

Description This command displays MPLS-TP tunnel information.

Parameters *path-name* — Specifies the path name, up to 32 characters max.

Sample Output

```
A:mplstp-dutC# show router mpls mpls-tp transit-path
<path-name>
 "tp-32"   "tp-33"   "tp-34"   "tp-35"   "tp-36"   "tp-37"   "tp-38"   "tp-39"
 "tp-40"   "tp-41"
detail

A:mplstp-dutC# show router mpls mpls-tp transit-path "tp-32"

===============================================================================
MPLS-TP Transit tp-32 Path Information
===============================================================================
Path Name     : tp-32
Admin State   : Up                                Oper State    : Up

-------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F
-------------------------------------------------------------------
FP                            2080      2081      CtoB_1
RP                            2081      2080      CtoA_1
===============================================================================
A:mplstp-dutC# show router mpls mpls-tp transit-path "tp-32" detail

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

```
MPLS-TP Transit tp-32 Path Information (Detail)
===============================================================================
Path Name     : tp-32
Admin State   : Up                                Oper State    : Up
-------------------------------------------------------------------------------
Path ID configuration
Src Global ID : 42                                Dst Global ID : 42
Src Node ID   : 0.0.3.234                         Dst Node ID   : 0.0.3.233
LSP Number    : 2                                 Dst Tunnel Num: 32

Forward Path configuration
In Label      : 2080                              Out Label     : 2081
Out Interface : CtoB_1                            Next Hop Addr : n/a

Reverse Path configuration
In Label      : 2081                              Out Label     : 2080
Out Interface : CtoA_1                            Next Hop Addr : n/a
===============================================================================
A:mplstp-dutC#
```

p2mp-info

Syntax **p2mp-info** [**type** {**originate** | **transit** | **terminate**}] [**s2l-endpoint** *ip-address*]

Context show>router>mpls

Description This command displays P2MP cross-connect information.

Parameters **type —** Specifies the P2MP type.

Values **originate** — Specifies to display the static LSPs that originate at this virtual router.
transit — Specifies to display the static LSPs that transit through this virtual router.
terminate — Specifies to display the static LSPs that terminate at this virtual router.

Sample Output

```
*A:Dut-C# show router mpls p2mp-info


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

MPLS P2MP Cross Connect Information

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

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

S2L ipmsi-4000-73729::path_ipmsi

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

Source IP Address    : 10.20.1.1             Tunnel ID     : 61441

P2MP ID              : 4000                  Lsp ID        : 29696
```

```
S2L Name             : ipmsi-4000-73729::pa* To            : 10.20.1.3
In Interface         : 1/1/1                 In Label      : 262129
Num. of S2ls         : 1
-------------------------------------------------------------------------------
S2L ipmsi-65535-73730::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.1             Tunnel ID     : 61442
P2MP ID              : 65535                 Lsp ID        : 30208
S2L Name             : ipmsi-65535-73730::p* To            : 10.20.1.3
In Interface         : 1/1/1                 In Label      : 262128
Num. of S2ls         : 1
-------------------------------------------------------------------------------
S2L ipmsi-1001-73728::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.1             Tunnel ID     : 61440
P2MP ID              : 1001                  Lsp ID        : 35840
S2L Name             : ipmsi-1001-73728::pa* To            : 10.20.1.3
In Interface         : 1/1/1                 In Label      : 262127
Num. of S2ls         : 1
-------------------------------------------------------------------------------
S2L ipmsi-1001-73732::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.2             Tunnel ID     : 64944
P2MP ID              : 1001                  Lsp ID        : 34816
S2L Name             : ipmsi-1001-73732::pa* To            : 10.20.1.3
In Interface         : 1/1/2                 In Label      : 262114
Num. of S2ls         : 1
-------------------------------------------------------------------------------
S2L ipmsi-4000-73729::path_ipmsi
-------------------------------------------------------------------------------
```

```
Source IP Address    : 10.20.1.3             Tunnel ID     : 61441
P2MP ID              : 4000                  Lsp ID        : 16384
S2L Name             : ipmsi-4000-73729::pa* To            : 10.20.1.1
Out Interface        : 1/1/1                 Out Label     : 262131
Num. of S2ls         : 1
-------------------------------------------------------------------------
S2L ipmsi-4000-73729::path_ipmsi
-------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61441
P2MP ID              : 4000                  Lsp ID        : 16384
S2L Name             : ipmsi-4000-73729::pa* To            : 10.20.1.4
Out Interface        : 2/1/1                 Out Label     : 262121
Num. of S2ls         : 1
-------------------------------------------------------------------------
S2L ipmsi-1001-73728::path_ipmsi
-------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61440
P2MP ID              : 1001                  Lsp ID        : 22016
S2L Name             : ipmsi-1001-73728::pa* To            : 10.20.1.1
Out Interface        : 1/1/1                 Out Label     : 262129
Num. of S2ls         : 1
-------------------------------------------------------------------------
S2L ipmsi-1001-73728::path_ipmsi
-------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61440
P2MP ID              : 1001                  Lsp ID        : 22016
S2L Name             : ipmsi-1001-73728::pa* To            : 10.20.1.2
Out Interface        : 1/1/2                 Out Label     : 262115
Num. of S2ls         : 1
-------------------------------------------------------------------------
S2L ipmsi-1001-73728::path_ipmsi
```

```
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61440
P2MP ID              : 1001                  Lsp ID        : 22016
S2L Name             : ipmsi-1001-73728::pa* To            : 10.20.1.4
Out Interface        : 2/1/1                 Out Label     : 262108
Num. of S2ls         : 2
-------------------------------------------------------------------------------
S2L ipmsi-1001-73728::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61440
P2MP ID              : 1001                  Lsp ID        : 22016
S2L Name             : ipmsi-1001-73728::pa* To            : 10.20.1.5
Out Interface        : 2/1/1                 Out Label     : 262108
Num. of S2ls         : 2
-------------------------------------------------------------------------------
S2L ipmsi-65535-73730::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61442
P2MP ID              : 65535                 Lsp ID        : 46592
S2L Name             : ipmsi-65535-73730::p* To            : 10.20.1.1
Out Interface        : 1/1/1                 Out Label     : 262130
Num. of S2ls         : 1
-------------------------------------------------------------------------------
S2L ipmsi-65535-73730::path_ipmsi
-------------------------------------------------------------------------------
Source IP Address    : 10.20.1.3             Tunnel ID     : 61442
P2MP ID              : 65535                 Lsp ID        : 46592
S2L Name             : ipmsi-65535-73730::p* To            : 10.20.1.4
Out Interface        : 2/1/1                 Out Label     : 262109
Num. of S2ls         : 1
```

```
-------------------------------------------------------------------------------
P2MP Cross-connect instances : 12
```

p2mp-lsp

Syntax **p2mp-lsp** [*lsp-name*] [**detail**]
p2mp-lsp [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] [**mbb**]
p2mp-lsp [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] **s2l** [*s2l-name* [**to** *s2l-to-address*]] [**status** {**up** | **down**}] [**detail**]
p2mp-lsp [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] **s2l** [*s2l-name* [**to** *s2l-to-address*]] **mbb**

Context show>router>mpls

Description This command displays MPLS P2MP LSP information.

Parameters *lsp-name* — Specifies the name of the LSP used in the path.

p2mp-instance[*p2mp-instance-name* **—** Specifies the administrative name for the P2MP instance which must be unique within a virtual router instance.

mbb — Specifies to display make-before-break (MBB) information.

s2l — Specifies the source-to-leaf (S2L) name.

to *s2l-to-address* **—**

status — Displays the status of the p2mp LSP.

Values up — Displays the total time that this S2l has been operational.
down — Displays the total time that this S2l has not been operational.

Sample Output

```
*A:Dut-C# show router mpls p2mp-lsp

  - p2mp-lsp [<lsp-name>] [detail]

  - p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] [mbb]

  - p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] s2l [<s2l-name>

    [to <s2l-to-address>]][status {up|down}] [detail]

  - p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] s2l [<s2l-name>

    [to <s2l-to-address>]] <mbb>

  - p2mp-lsp using-template [lsp-template <template-name>] [detail]


<lsp-name>           : [64 chars max] - accepts * as wildcard char

<p2mp-instance>      : keyword
```

```
<p2mp-instance-name> : [max 32 chars]

<s2l>                : keyword

<s2l-name>           : [max 32 chars]

<up|down>            : keywords

<detail>             : keyword

<mbb>                : keyword

<s2l-to-address>     : [a.b.c.d]

<using-template>     : keyword

<lsp-template>       : [32 chars max]


*A:Dut-C# show router mpls p2mp-lsp


===============================================================================
MPLS P2MP LSPs (Originating)

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

LSP Name                                                          Adm   Opr

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

ipmsi-1001-73728                                                  Up    Up

ipmsi-4000-73729                                                  Up    Up

ipmsi-65535-73730                                                 Up    Up

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

LSPs : 3

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

*A:Dut-C# show router mpls p2mp-lsp detail


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

MPLS P2MP LSPs (Originating) (Detail)

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

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

Type : Originating

-------------------------------------------------------------------------------
```

```
LSP Name    : ipmsi-1001-73728
LSP Type    : P2mpAutoLsp                    LSP Tunnel ID  : 61440
From        : 10.20.1.3
Adm State   : Up                             Oper State     : Up
LSP Up Time : 6d 21:08:37                    LSP Down Time  : 0d 00:00:00
Transitions : 1                              Path Changes   : 1
Retry Limit : 0                              Retry Timer    : 30 sec
Signaling   : RSVP                           Resv. Style    : SE
Hop Limit   : 255                            Negotiated MTU : n/a
Adaptive    : Enabled                        ClassType      : 0
FastReroute : Enabled                        Oper FR        : Enabled
FR Method   : Facility                       FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                         FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                        ADSPEC         : Disabled
Metric      : Disabled                       Use TE metric  : Disabled
Include Grps:                                Exclude Grps   :
None                                         None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp : Disabled                       VprnAutoBind   : Disabled
IGP Shortcut: Disabled                       BGP Shortcut   : Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled                       CSPFFirstLoose : Disabled

P2MPInstance: 1001                           P2MP-Inst-type : Primary
S2L Cfg Cou*: 4                              S2L Oper Count*: 4
S2l-Name    : path_ipmsi                     To             : 10.20.1.1
S2l-Name    : path_ipmsi                     To             : 10.20.1.2
```

```
S2l-Name    : path_ipmsi                        To             : 10.20.1.4
S2l-Name    : path_ipmsi                        To             : 10.20.1.5
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-4000-73729
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61441
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 6d 21:08:38                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp : Disabled                          VprnAutoBind   : Disabled
IGP Shortcut: Disabled                          BGP Shortcut   : Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
```

```
Prop Adm Grp: Disabled                          CSPFFirstLoose : Disabled

P2MPInstance: 4000                              P2MP-Inst-type : Primary
S2L Cfg Cou*: 2                                 S2L Oper Count*: 2
S2l-Name    : path_ipmsi                        To             : 10.20.1.1
S2l-Name    : path_ipmsi                        To             : 10.20.1.4
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-65535-73730
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61442
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 6d 21:08:39                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp : Disabled                          VprnAutoBind   : Disabled
```

```
IGP Shortcut: Disabled                          BGP Shortcut   : Disabled

BGPTransTun : Disabled

Oper Metric : Disabled

Prop Adm Grp: Disabled                          CSPFFirstLoose : Disabled


P2MPInstance: 65535                             P2MP-Inst-type : Primary

S2L Cfg Cou*: 2                                 S2L Oper Count*: 2

S2l-Name    : path_ipmsi                        To             : 10.20.1.1

S2l-Name    : path_ipmsi                        To             : 10.20.1.4

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

* indicates that the corresponding row element may have been truncated.

*A:Dut-C#


*A:sim1>config>router>mpls>lsp$ show router mpls p2mp-lsp p2mp-instance s2l detail

===============================================================================
MPLS LSP  S2L  (Detail)
===============================================================================
Legend :
    @ - Detour Available                         # - Detour In Use
    b - Bandwidth Protected                      n - Node Protected
    S - Strict                                   L - Loose
    s - Soft Preemption
===============================================================================
-------------------------------------------------------------------------------
LSP 1 S2L 1
-------------------------------------------------------------------------------
LSP Name    : 1                                 S2l LSP ID  : 26624
P2MP ID     : 0                                 S2l Grp Id  : 0
Adm State   : Up                                Oper State  : Down
S2l State:  : Inactive                                      :
S2L Name    : 1                                 To          : 10.20.1.3
S2l Admin   : Up                                S2l Oper    : Down
OutInterface: n/a                               Out Label   : n/a
S2L Up Time : 0d 00:00:00                       S2L Dn Time : 0d 00:00:01
RetryAttempt: 0                                 NextRetryIn : 9 sec (Fast)
S2L Trans   : 8                                 CSPF Queries: 4
Failure Code: noError                           Failure Node: n/a
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    No Hops Specified
ComputedHops:
    No Hops Specified
LastResignal: n/a
===============================================================================
```

```
show router mpls p2mp-lsp p2mp-instance s2l detail

===============================================================================
-------------------------------------------------------------------------------
LSP 2 S2L 2
-------------------------------------------------------------------------------
LSP Name    : 2                                     S2l LSP ID  : 52230
P2MP ID     : 0                                     S2l Grp Id  : 2
Adm State   : Up                                    Oper State  : Up
S2l State:  : Active                                            :
S2L Name    : 2                                     To          : 10.20.1.3
S2l Admin   : Up                                    S2l Oper    : Up
OutInterface: 1/1/1                                 Out Label   : 131071
S2L Up Time : 0d 00:04:43                           S2L Dn Time : 0d 00:00:00
RetryAttempt: 0                                     NextRetryIn : 0 sec
S2L Trans   : 5                                     CSPF Queries: 21
Failure Code: tunnelLocallyRepaired                 Failure Node: 10.20.1.2
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    10.10.1.1(10.20.1.1)                            Record Label    : N/A
 -> 10.10.1.2(10.20.1.2) @ #                        Record Label    : 131071
 -> 10.10.6.3(10.20.1.3)                            Record Label    : 131068
ComputedHops:
    10.10.1.1(S)       -> 10.10.1.2(S)       -> 10.10.5.3(S)
LastResignal: n/a
In Prog MBB :
 MBB Type   : GlobalRevert                          NextRetryIn : n/a
 Timeout In : 23 sec
 Started At : 06/29/2011 11:06:09                   RetryAttempt: 7
 FailureCode: noError                               Failure Node: n/a
===============================================================================


*A:Dut-C>config>router>mpls>lsp$ /show router mpls lsp path detail
===============================================================================
MPLS LSP  Path  (Detail)
===============================================================================
Legend :
    @ - Detour Available              # - Detour In Use
    b - Bandwidth Protected           n - Node Protected
    s - Soft Preemption
    S - Strict                        L - Loose
===============================================================================
-------------------------------------------------------------------------------
LSP 1 Path 1
-------------------------------------------------------------------------------
LSP Name    : 1                                     Path LSP ID : 56320
From        : 10.20.1.3                             To          : 10.10.1.1
Adm State   : Up                                    Oper State  : Up
Path Name   : 1                                     Path Type   : Primary
Path Admin  : Up                                    Path Oper   : Up
OutInterface: 1/1/1                                 Out Label   : 131071
Path Up Time: 0d 00:03:09                           Path Dn Time: 0d 00:00:00
Retry Limit : 0                                     Retry Timer : 30 sec
RetryAttempt: 0                                     NextRetryIn : 0 sec
SetupPriori*: 7                                     Hold Priori*: 0
Preference  : n/a
Bandwidth   : No Reservation                        Oper Bw     : 0 Mbps
Hop Limit   : 255                                   Class Type  : 0
Backup CT   : None
```

```
MainCT Retry: n/a                                MainCT Retry: 0
    Rem     :                                        Limit   :
Oper CT     : 0
Record Route: Record                             Record Label: Record
Oper MTU    : 1496                               Neg MTU     : 1496
Adaptive    : Enabled                            Oper Metric : 1000
Include Grps:                                    Exclude Grps:
None                                            None
Path Trans  : 1                                  CSPF Queries: 3
Failure Code: badNode                            Failure Node: 10.20.1.3

Oper Values :
Setup Prior*: 7                                  Hold Priori*: 0
Record Route: Record                             Record Label: Record
Hop Limit   : 255
Adspec      : Disabled
CSPF        : Enabled                            CSPFToFirst*: Disabled
Least Fill  : Disabled                           FR Node Pro*: Disabled
Prop Adm Grp: Disabled
Include Grps:                                    Exclude Grps:
None                                            None

ExplicitHops:
    No Hops Specified
Actual Hops :
    10.10.2.3(10.20.1.3) @ #                     Record Label    : N/A
 -> 10.10.1.1(10.20.1.1)                         Record Label    : 131071
ComputedHops:
    10.10.2.3(S)       -> 10.10.2.1(S)
ResigEligib*: False
LastResignal: n/a                                CSPF Metric : 1000
In Prog MBB :
 MBB Type   : GlobalRevert                       NextRetryIn : 0 sec
 Timeout In : 22 sec
 Started At : 08/26/2011 23:59:29                RetryAttempt: 2
 FailureCode: noError                            Failure Node: n/a
 Signaled BW: 0 Mbps
===============================================================================
* indicates that the corresponding row element may have been truncated.


show router mpls p2mp-lsp p2mp-instance s2l detail
-------------------------------------------------------------------------------
LSP 2 S2L 2
-------------------------------------------------------------------------------
LSP Name    : 2                                  S2l LSP ID  : 52230
P2MP ID     : 0                                  S2l Grp Id  : 4
Adm State   : Up                                 Oper State  : Down
S2l State:  : Inactive                                       :
S2L Name    : 2                                  To          : 10.20.1.3
S2l Admin   : Up                                 S2l Oper    : In Progress
OutInterface: n/a                                Out Label   : n/a
S2L Up Time : 0d 00:00:00                        S2L Dn Time : 0d 00:00:20
RetryAttempt: 1                                  NextRetryIn : n/a
Timeout In  : 21 sec
S2L Trans   : 6                                  CSPF Queries: 27
Failure Code: noError                            Failure Node: n/a
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    No Hops Specified
```

```
LastResignal: n/a


*A:Dut-C# show router mpls p2mp-lsp
===============================================================================
MPLS P2MP LSPs (Originating)
===============================================================================
LSP Name                                                        Adm   Opr
-------------------------------------------------------------------------------
ipmsi-1001-73728                                                Up    Up
ipmsi-4000-73729                                                Up    Up
ipmsi-65535-73730                                               Up    Up
-------------------------------------------------------------------------------
LSPs : 3
===============================================================================
*A:Dut-C# show router mpls p2mp-lsp detail
===============================================================================
MPLS P2MP LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-1001-73728
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61440
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 6d 21:08:37                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
Auto BW     : Disabled
LdpOverRsvp : Disabled                          VprnAutoBind   : Disabled
IGP Shortcut: Disabled                          BGP Shortcut   : Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled                          CSPFFirstLoose : Disabled
P2MPInstance: 1001                              P2MP-Inst-type : Primary
S2L Cfg Cou*: 4                                 S2L Oper Count*: 4
S2l-Name    : path_ipmsi                        To             : 10.20.1.1
S2l-Name    : path_ipmsi                        To             : 10.20.1.2
S2l-Name    : path_ipmsi                        To             : 10.20.1.4
S2l-Name    : path_ipmsi                        To             : 10.20.1.5
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-4000-73729
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61441
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 6d 21:08:38                       LSP Down Time  : 0d 00:00:00
```

```
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
Auto BW     : Disabled
LdpOverRsvp : Disabled                          VprnAutoBind   : Disabled
IGP Shortcut: Disabled                          BGP Shortcut   : Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled                          CSPFFirstLoose : Disabled
P2MPInstance: 4000                              P2MP-Inst-type : Primary
S2L Cfg Cou*: 2                                 S2L Oper Count*: 2
S2l-Name    : path_ipmsi                        To             : 10.20.1.1
S2l-Name    : path_ipmsi                        To             : 10.20.1.4
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-65535-73730
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61442
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 6d 21:08:39                       LSP Down Time  : 0d 00:00:00
Transitions : 1                                 Path Changes   : 1
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled
Auto BW     : Disabled
LdpOverRsvp : Disabled                          VprnAutoBind   : Disabled
IGP Shortcut: Disabled                          BGP Shortcut   : Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled                          CSPFFirstLoose : Disabled
P2MPInstance: 65535                             P2MP-Inst-type : Primary
S2L Cfg Cou*: 2                                 S2L Oper Count*: 2
S2l-Name    : path_ipmsi                        To             : 10.20.1.1
S2l-Name    : path_ipmsi                        To             : 10.20.1.4
===============================================================================
* indicates that the corresponding row element may have been truncated.

*A:Dut-C#
*A:sim1>config>router>mpls>lsp$ show router mpls p2mp-lsp p2mp-instance s2l detail
```

```
===============================================================================
MPLS LSP  S2L  (Detail)
===============================================================================
Legend :
    @ - Detour Available                          # - Detour In Use
    b - Bandwidth Protected                       n - Node Protected
    S - Strict                                    L - Loose
    s - Soft Preemption
===============================================================================
-------------------------------------------------------------------------------
LSP 1 S2L 1
-------------------------------------------------------------------------------
LSP Name    : 1                                   S2l LSP ID  : 26624
P2MP ID     : 0                                   S2l Grp Id  : 0
Adm State   : Up                                  Oper State  : Down
S2l State:  : Inactive                                        :
S2L Name    : 1                                   To          : 10.20.1.3
S2l Admin   : Up                                  S2l Oper    : Down
OutInterface: n/a                                 Out Label   : n/a
S2L Up Time : 0d 00:00:00                         S2L Dn Time : 0d 00:00:01
RetryAttempt: 0                                   NextRetryIn : 9 sec (Fast)
S2L Trans   : 8                                   CSPF Queries: 4
Failure Code: noError                             Failure Node: n/a
ExplicitHops:
    10.20.1.2(S)
Actual Hops :
    No Hops Specified
ComputedHops:
    No Hops Specified
LastResignal: n/a
===============================================================================

A:ALU-25# show router mpls p2mp-lsp lsp_1
===============================================================================
MPLS LSPs (Originating)
===============================================================================
LSP Name                      To/P2MP ID             Fastfail     Adm   Opr
                                                       Config
-------------------------------------------------------------------------------
lsp_1                              18                  Yes          Up    Up
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
A:ALU-25#

A:ALU-25# show router mpls p2mp-lsp Test_p2mp detail
===============================================================================
MPLS P2MP LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp_1                             LSP Tunnel ID  : 1
From       : 10.10.1.1                        P2MP ID       : 18
Adm State   : Up                                Oper State     : Down
LSP Up Time : 0d 00:00:00                       LSP Down Time  : 0d 20:39:48
Transitions : 0                                 Path Changes   : 0
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : FF
Hop Limit   : 255                               Adaptive       : Enabled
FastReroute : Disabled                          Oper FR        : Disabled
```

```
FR Method   : Facility                          FR Hop Limit   : 45
FR Bandwidth: 0 Mbps                            FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Disabled                          ADSPEC         : Disabled
Metric      : 1                                 Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None

P2MPinstance:Test_p2mp                          p2mp-inst-type : primary

S2L Name    :Test-s2l1                          To             : 10.20.1.6
S2L Name    :Test-s2l2                          To             : 10.20.1.5
S2L Name    :Test-s2l3                          To             : 10.20.1.4
-------------------------------------------------------------------------------
A:ALU-25#

A:ALU-25# show router mpls p2mp-lsp Test_p2mp
===============================================================================
MPLS P2MP Instance (Originating)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp_1                             LSP Tunnel ID  : 1
P2MP ID     : 18                                Path LSP ID    : 18
Adm State   : Up                                Oper State     : Down

P2MPinstance:Test_p2mp                          p2mp-inst-type : primary
Inst Name   : lsp_1                             P2MP Inst ID   : 1
Adm State   : Up                                Oper State     : Down
Inst Up Time: 0d 00:00:00                       Inst Down Time : 0d 20:39:48
Hop Limit   : 255                               Adaptive       : Enabled
Record Route: Record                            Record Label   : Record
Include Grps:                                   Exclude Grps   :
None                                            None
Bandwidth   : 0 Mbps                            Oper Bw        : 0 Mbps

S2L Name    :Test-s2l1                          To             : 10.20.1.6
S2L Name    :Test-s2l2                          To             : 10.20.1.5
S2L Name    :Test-s2l3                          To             : 10.20.1.4
-------------------------------------------------------------------------------
A:ALU-25#
```

Note that the normal output is in detailed format only. There is no separate detail format.

```
A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-name]
===============================================================================
MPLS P2MP Instance (Originating)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp_1                             LSP Tunnel ID  : 1
P2MP ID     : 18                                Path LSP ID    : 18
Adm State   : Up                                Oper State     : Down

P2MPinstance:Test_p2mp                          p2mp-inst-type : primary
Inst Name   : lsp_1                             P2MP Inst ID   : 1
Adm State   : Up                                Oper State     : Down
Inst Up Time: 0d 00:00:00                       Inst Down Time : 0d 20:39:48
```

```
Hop Limit   : 255                               Adaptive       : Enabled
Record Route: Record                            Record Label   : Record
Include Grps:                                   Exclude Grps   :
None                                            None
Bandwidth   : 0 Mbps                            Oper Bw        : 0 Mbps

S2L Name    :Test-s211                          To             : 10.20.1.6
S2L Name    :Test-s212                          To             : 10.20.1.5
S2L Name    :Test-s213                          To             : 10.20.1.4
-------------------------------------------------------------------------------
A:ALU-52#


A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-name]
mbb
===============================================================================
MPLS P2MP Instance (Originating)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp_1                             LSP Tunnel ID  : 1
P2MP ID     : 18                                Path LSP ID    : 18
Adm State   : Up                                Oper State     : Down

P2MPinstance:Test_p2mp                          p2mp-inst-type : primary
Inst Name   : lsp_1                             P2MP Inst ID   : 1
Adm State   : Up                                Oper State     : Down
Inst Up Time: 0d 00:00:00                       Inst Down Time : 0d 20:39:48
Hop Limit   : 255                               Adaptive       : Enabled
Record Route: Record                            Record Label   : Record
Include Grps:                                   Exclude Grps   :
None                                            None
Bandwidth   : 0 Mbps                            Oper Bw        : 0 Mbps
Last MBB    :
MBB type    :                                   Mbb State      :
ended at    :                                   Old Metric     :
In Prog MBB :
MBB type    :                                   Next Retry In  :
Started at  :                                   Retry Attempt  :
Failure code:                                   Failure Node   :

S2L Name    :Test-s211                          To             : 10.20.1.6
S2l Admin   :                                   S2l Oper       :
Failure code:                                   Failure Node   : 10.12.1.1

S2L Name    :Test-s211          To              : 10.20.1.6
S2l Admin   :                                   S2l Oper       :
Failure code:                                   Failure Node   : 10.12.1.1
-------------------------------------------------------------------------------
A:ALU-52#


A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-name]
s2l [s2l-name]
===============================================================================
MPLS S2Ls (Originating)
===============================================================================
S2L Name                          To             Next Hop     Adm   Opr
-------------------------------------------------------------------------------
Test-s211                         10.20.1.6      10.10.1.2    Up    Up
```

```
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
A:ALU-52#


A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-name]
s2l [s2l-name] detail
===============================================================================
MPLS S2Ls (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp_1                           LSP Tunnel ID  : 1
P2MP ID     : 18                              Path LSP ID    : 18
Adm State   : Up                              Oper State     : Down

P2MP Primary Instance:
Inst Name   : lsp_1                           P2MP Inst ID   : 1
Adm State   : Up                              Oper State     : Down

S2L Name    : Test-s2l1                       To             : 10.20.1.6
Adm State   : Up                              Oper State     : Down
OutInterface: 1/1/1                           Out Label      : 131071
S2L Up Time : 0d 00:00:00                     S2L Down Time  : 0d 20:39:48
Transitions : 0                               Path Changes   : 0
Retry Limit : 0                               Retry Timer    : 30 sec
RetryAttempt: 0                               NextRetryIn    : 0 sec
Bandwidth   : No Reservation                  Oper Bw        : 0 Mbps
Hop Limit   : 255                             Adaptive       : Enabled
Record Route: Record                          Record Label   : Record
Oper MTU    : 1496                            Neg MTU        : 1496
FastReroute : Disabled                        Oper FR        : Disabled
FR Method   : Facility                        FR Hop Limit   : 45
FR Bandwidth: 0 Mbps                          FR Node Protect: Disabled
FR Object   : Enabled
CSPF        : Disabled                        ADSPEC         : Disabled
Metric      : 1                               Use TE metric  : Disabled
Include Grps:                                 Exclude Grps   :
None                                          None
CSPF Queries: 9
Failure Code: noError                         Failure Node   : n/a
ExplicitHops:
    No Hops Specified
Actual Hops :
    10.10.1.1(10.20.1.1) @                    Record Label   : N/A
 -> 10.10.1.2(10.20.1.2)                      Record Label   : 131071
ComputedHops:
    10.10.1.1       -> 10.10.1.2
LastResignal: n/a                             CSPF Metric    : 1000
-------------------------------------------------------------------------------
A:ALU-52#


*A:Dut-C# show router mpls p2mp-lsp "ipmsi-1-73752" detail

===============================================================================
MPLS P2MP LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
```

```
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : ipmsi-1-73752
LSP Type    : P2mpAutoLsp                       LSP Tunnel ID  : 61445
From        : 10.20.1.3
Adm State   : Up                                Oper State     : Up
LSP Up Time : 0d 00:00:51                       LSP Down Time  : 0d 00:00:00
Transitions : 3                                 Path Changes   : 3
Retry Limit : 0                                 Retry Timer    : 30 sec
Signaling   : RSVP                              Resv. Style    : SE
Hop Limit   : 255                               Negotiated MTU : n/a
Adaptive    : Enabled                           ClassType      : 0
FastReroute : Enabled                           Oper FR        : Enabled
FR Method   : Facility                          FR Hop Limit   : 16
FR Node Pro*: Disabled                          FR Prop Adm Grp: Disabled
FR Object   : Enabled
Egress Stats: Enabled                           Egress Oper St*: Out-of-resource
CSPF        : Enabled                           ADSPEC         : Disabled
Metric      : Disabled                          Use TE metric  : Disabled
Include Grps:                                   Exclude Grps   :
None                                            None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp : Enabled                           VprnAutoBind   : Enabled
IGP Shortcut: Enabled                           BGP Shortcut   : Enabled
IGP LFA     : Disabled                          IGP Rel Metric : Disabled
BGPTransTun : Enabled
Oper Metric : Disabled
Prop Adm Grp: Disabled

P2MPInstance: 1                                 P2MP-Inst-type : Primary
S2L Cfg Cou*: 4                                 S2L Oper Count*: 4
S2l-Name    : path_ipmsi                        To             : 10.20.1.1
S2l-Name    : path_ipmsi                        To             : 10.20.1.2
S2l-Name    : path_ipmsi                        To             : 10.20.1.5
S2l-Name    : path_ipmsi                        To             : 10.20.1.6
===============================================================================
```

srlg-database

Syntax **srlg-database** [**router-id** *ip-address*] [**interface** *ip-address*]

Context show>router>mpls

Description This command displays MPLS SRLG database information.

Parameters **router-id** *ip-address* — Specifies a 32-bit integer uniquely identifying the router in the Autonomous System. By convention to ensure uniqueness, this may default to the value of one of the router's IPv4 host addresses, represented as a 32-bit unsigned integer, if IPv4 is configured on the router. The router-id can be either the local one or some remote router.

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

path

Syntax **path** [*path-name*] [*lsp-binding*]

Context show>router>mpls

Description This command displays MPLS paths.

Parameters *path-name* — The unique name label for the LSP path.

lsp-binding — Keyword to display binding information.

Output **MPLS Path Output —** The following table describes MPLS Path output fields.

Label	Description
Path Name	The unique name label for the LSP path.
Adm	Down — The path is administratively disabled. Up — The path is administratively enabled.
Hop Index	The value used to order the hops in a path.
IP Address	The IP address of the hop that the LSP should traverse on the way to the egress router.
Strict/Loose	Strict — The LSP must take a direct path from the previous hop router to the next router. Loose — The route taken by the LSP from the previous hop to the next hop can traverse through other routers.
LSP Name	The name of the LSP used in the path.
Binding	Primary — The preferred path for the LSP. Secondary — The standby path for the LSP.
Paths	Total number of paths configured.

Sample Output

```
*A:SRU4>config>router>mpls# show router mpls path
===============================================================================
MPLS Path:
===============================================================================
Path Name                       Adm  Hop Index   IP Address       Strict/Loose
-------------------------------------------------------------------------------
to_110_20_1_1                   Up   no hops     n/a              n/a

to_110_20_1_2                   Up   no hops     n/a              n/a

to_110_20_1_3                   Up   no hops     n/a              n/a

to_110_20_1_4                   Up   no hops     n/a              n/a

to_110_20_1_5                   Up   no hops     n/a              n/a
```

```
to_110_20_1_6                    Up   no hops     n/a              n/a

to_110_20_1_110                  Up   no hops     n/a              n/a

to_10_8_100_15                   Up   no hops     n/a              n/a

to_10_20_1_20                    Up   no hops     n/a              n/a

to_10_20_1_22                    Up   no hops     n/a              n/a

to_10_100_1_1                    Up   no hops     n/a              n/a
-------------------------------------------------------------------------------
Paths : 11
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls path lsp-binding
===============================================================================
MPLS Path:
===============================================================================
Path Name                        Opr  LSP Name                          Binding
-------------------------------------------------------------------------------
to_110_20_1_1                    Up   to_110_20_1_1_cspf                Primary
                                 Up   to_110_20_1_1_cspf_2              Primary
                                 Up   to_110_20_1_1_cspf_3              Primary
Up   to_110_20_1_1_cspf_16            Primary
                                 Up   to_110_20_1_1_cspf_17             Primary
                                 Up   to_110_20_1_1_cspf_18             Primary
                                 Up   to_110_20_1_1_cspf_19             Primary
                                 Up   to_110_20_1_1_cspf_20             Primary
to_110_20_1_2                    Up   to_110_20_1_2_cspf                Primary
                                 Up   to_110_20_1_2_cspf_2              Primary
                                 Up   to_110_20_1_2_cspf_3              Primary
                                 Up   to_110_20_1_2_cspf_4              Primary
                                 Up   to_110_20_1_2_cspf_5              Primary
...
to_10_100_1_1                    Down to_10_100_1_1_cspf                Primary
                                 Down to_10_100_1_1_cspf_2              Primary
                                 Down to_10_100_1_1_cspf_3              Primary
                                 Down to_10_100_1_1_cspf_4              Primary
                                 Down to_10_100_1_1_cspf_5              Primary
                                 Down to_10_100_1_1_cspf_6              Primary
Down to_10_100_1_1_cspf_13            Primary
                                 Down to_10_100_1_1_cspf_14             Primary
                                 Down to_10_100_1_1_cspf_15             Primary
                                 Down to_10_100_1_1_cspf_16             Primary
                                 Down to_10_100_1_1_cspf_17             Primary
                                 Down to_10_100_1_1_cspf_18             Primary
                                 Down to_10_100_1_1_cspf_19             Primary
                                 Down to_10_100_1_1_cspf_20             Primary
-------------------------------------------------------------------------------
Paths : 11
===============================================================================
*A:SRU4>config>router>mpls#
```

srlg-group

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

Context show>router>mpls

Description This command displays MPLS SRLG groups

Parameters *group-name* — Specifies the name of the SRLG group within a virtual router instance.

Output **MPLS SRLG Group Output —** The following table describes MPLS SRLG group output fields

Label	Description
Group Name	Displays the name of the SRLG group within a virtual router instance.
Group Value	Displays the group value associated with this SRLG group.
Interface	Displays the interface where the SRLG groups is associated.
No. of Groups	Displays the total number of SRLG groups associated with the output.

Sample Output

```
*A:SRU4>config>router>mpls# show router mpls srlg-group
===============================================================================
MPLS Srlg Groups
===============================================================================
Group Name                      Group Value   Interfaces
-------------------------------------------------------------------------------
1432                            1432          srl-1
1433                            1433          srl-3
1434                            1434          aps-8
1435                            1435          aps-9
2410                            2410          srr-1
2411                            2411          srr-2
2412                            2412          srr-3
3410                            3410          aps-1
3420                            3420          aps-2
3430                            3430          aps-3
3440                            3440          sr4-1
41.80                           4180          g7600
41104                           41104         germ-1
415.70                          41570         gsr1
420.40                          42040         m160
422.60                          42260         gsr2
44.200                          44200         hubA
45100                           45100         ess-7-1
45110                           45110         ess-7-2
45120                           45120         ess-7-3
4651                            4651          src-1.1
4652                            4652          src-1.2
4653                            4653          src-1.3
4654                            4654          src-1.4
4655                            4655          src-1.5
4656                            4656          src-1.6
4657                            4657          src-1.7
4658                            4658          src-1.8
```

```
4659                            4659          src-1.9
4660                            4660          src-1.10
-------------------------------------------------------------------------------
No. of Groups: 30
===============================================================================
*A:SRU4>config>router>mpls#


*A:SRU4>config>router>mpls# show router mpls srlg-group "1432"
===============================================================================
MPLS Srlg Groups
===============================================================================
Group Name                      Group Value   Interfaces
-------------------------------------------------------------------------------
1432                            1432          srl-1
-------------------------------------------------------------------------------
No. of Groups: 1
===============================================================================
*A:SRU4>config>router>mpls#
```

static-lsp

Syntax **static-lsp** [*lsp-name*]
static-lsp {**transit** | **terminate**}
static-lsp count

Context show>router>mpls

Description This command displays MPLS static LSP information.

Output **MPLS Static LSP Output —** The following table describes MPLS static LSP output fields.

Label	Description
Lsp Name	The name of the LSP used in the path.
To	The system IP address of the egress router for the LSP.
Next Hop	The system IP address of the next hop in the LSP path.
In I/F	The ingress interface.
Out Label	The egress interface.
Out I/F	The egress interface.
Adm	Down — The path is administratively disabled.
	Up — The path is administratively enabled.
Opr	Down — The path is operationally down.
	Up — The path is operationally up.
LSPs	The total number of static LSPs.

Sample Output

```
A:ALA-12# show router mpls static-lsp
===============================================================================
MPLS Static LSPs (Originating)
===============================================================================
Lsp Name          To              Next Hop        Out Label Out I/F   Adm  Opr
-------------------------------------------------------------------------------
NYC_SJC_customer2 100.20.1.10     10.10.1.4       1020      1/1/1     Up   Up
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
A:ALA-12#


*A:SRU4>config>router>mpls# show router mpls static-lsp transit
===============================================================================
MPLS Static LSPs (Transit)
===============================================================================
In Label    In Port     Out Label   Out Port    Next Hop            Adm   Opr
-------------------------------------------------------------------------------
240         aps-1       440         1/1/10      11.22.11.3          Up    Up
241         aps-1       441         1/1/10      11.22.11.3          Up    Up
242         aps-1       442         1/1/10      11.22.11.3          Up    Up
243         aps-1       443         1/1/10      11.22.11.3          Up    Up
244         aps-1       444         1/1/10      11.22.11.3          Up    Up
245         aps-1       445         1/1/10      11.22.11.3          Up    Up
246         aps-1       446         1/1/10      11.22.11.3          Up    Up
247         aps-1       447         1/1/10      11.22.11.3          Up    Up
248         aps-1       448         1/1/10      11.22.11.3          Up    Up
249         aps-1       449         1/1/10      11.22.11.3          Up    Up
250         aps-1       450         1/1/10      11.22.11.3          Up    Up
251         aps-1       451         1/1/10      11.22.11.3          Up    Up
252         aps-1       452         1/1/10      11.22.11.3          Up    Up
253         aps-1       453         1/1/10      11.22.11.3          Up    Up
...
207         3/2/8       407         1/1/9       11.22.10.3          Up    Up
208         3/2/8       408         1/1/9       11.22.10.3          Up    Up
209         3/2/8       409         1/1/9       11.22.10.3          Up    Up
-------------------------------------------------------------------------------
LSPs : 256
===============================================================================
*A:SRU4>config>router>mpls#

A:ALA-12# show router mpls static-lsp terminate
===============================================================================
MPLS Static LSPs (Terminate)
===============================================================================
In Label    In I/F      Out Label   Out I/F     Next Hop            Adm   Opr
-------------------------------------------------------------------------------
1021        1/1/1       n/a         n/a         n/a                 Up    Up
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
A:ALA-12#
```

statistics-summary

Syntax **statistics-summary**

Context show>router>mpls>statistics-summary

Description This command displays the number of LSP statistics configured.

Sample Output

```
*A:SRU4>config>router>mpls# show router mpls statistics-summary
===============================================================================
Statistics Summary
===============================================================================
LSP egress statistics                  : 0
LSP ingress statistics                 : 0
===============================================================================
*A:SRU4>config>router>mpls#
```

status

Syntax **status**

Context show>router>mpls

Description This command displays MPLS operation information.

Output **MPLS Status Output —** The following table describes MPLS status output fields.

Label	Description
Admin Status	Down — MPLS is administratively disabled. Up — MPLS is administratively enabled.
Oper Status	Down — MPLS is operationally down. Up — MPLS is operationally up.
LSP Counts	Static LSPs — Displays the count of static LSPs that originate, transit, and terminate on or through the router. Dynamic LSPs — Displays the count of dynamic LSPs that originate, transit, and terminate on or through the router. Detour LSPs — Displays the count of detour LSPs that originate, transit, and terminate on or through the router.
FR Object	Enabled — Specifies that Fast reroute object is signaled for the LSP. Disabled — Specifies that Fast reroute object is not signaled for the LSP.
Resignal Timer	Enabled — Specifies that the resignal timer is enabled for the LSP. Disabled — Specifies that the resignal timer is disabled for the LSP.
Hold Timer	Displays the amount of time that the ingress node holds before programming its data plane and declaring the LSP up to the service module.

Sample Output

```
*A:SR-12/Dut-A# /show router mpls status

===============================================================================
MPLS Status
===============================================================================
Admin Status       : Up                 Oper Status        : Up
Oper Down Reason   : n/a
FR Object          : Enabled            Resignal Timer     : Disabled
Hold Timer         : 1 seconds          Next Resignal      : N/A
Srlg Frr           : Disabled           Srlg Frr Strict    : Disabled
```

```
Admin Group Frr    : Disabled
Dynamic Bypass     : Enabled           User Srlg Database : Disabled
BypassResignalTimer: Disabled          BypassNextResignal : N/A
Least Fill Min Thd.: 5 percent         LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled           Short. TTL Prop Tr*: Enabled
AB Sample Multipli*: 1                 AB Adjust Multipli*: 288
Exp Backoff Retry  : Disabled          CSPF On Loose Hop  : Disabled
Lsp Init RetryTime*: 30 seconds        MBB Pref Current H*: Enabled   Logger Event
Bundl*: Disabled
RetryIgpOverload   : Disabled

P2mp Resignal Timer: Disabled          P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled          Static LSP FR Timer: 30 seconds
P2P Max Bypass Ass*: 1000
P2PActPathFastRetry: Disabled          P2MP S2L Fast Retry: Disabled
In Maintenance Mode: No
MplsTp             : Disabled

LSP Counts          Originate          Transit             Terminate
-------------------------------------------------------------------------
Static LSPs         0                  0                   0
Dynamic LSPs        501                0                   0
Detour LSPs         0                  0                   0
P2MP S2Ls           0                  0                   0
MPLS-TP LSPs        0                  0                   0
Mesh-P2P LSPs       0                  0                   0
One Hop-P2P LSPs    0                  0                   0
=========================================================================


*A:bksim3107>show>router>mpls# status

=========================================================================
MPLS Status
=========================================================================
Admin Status       : Down              Oper Status        : Down
Oper Down Reason   : adminDown
FR Object          : Enabled           Resignal Timer     : Disabled
Hold Timer         : 1 seconds         Next Resignal      : N/A
Srlg Frr           : Disabled          Srlg Frr Strict    : Disabled
Admin Group Frr    : Disabled
Dynamic Bypass     : Enabled           User Srlg Database : Disabled
Least Fill Min Thd.: 5 percent         LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled           Short. TTL Prop Tr*: Enabled
AB Sample Multipli*: 1                 AB Adjust Multipli*: 288
Exp Backoff Retry  : Disabled          CSPF On Loose Hop  : Disabled
Lsp Init RetryTime*: 30 seconds
Logger Event Bundl*: Disabled

P2mp Resignal Timer: Disabled          P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled          Static LSP FR Timer: 30 seconds
P2P Max Bypass Ass*: 1000
P2PActPathFastRetry: Disabled          P2MP S2L Fast Retry: Disabled
In Maintenance Mode: No
MplsTp             : Disabled

LSP Counts          Originate          Transit             Terminate
-------------------------------------------------------------------------
Static LSPs         0                  0                   0
Dynamic LSPs        0                  0                   0
Detour LSPs         0                  0                   0
```

```
P2MP S2Ls           0                   0                   0
MPLS-TP LSPs        0                   0                   0
===============================================================================


*A:Dut-C# show router mpls status
===============================================================================
MPLS Status
===============================================================================
Admin Status       : Down               Oper Status        : Down
Oper Down Reason   : adminDown
FR Object          : Enabled            Resignal Timer     : Disabled
Hold Timer         : 1 seconds          Next Resignal      : N/A
Srlg Frr           : Disabled           Srlg Frr Strict    : Disabled
Dynamic Bypass     : Enabled            User Srlg Database : Disabled
Least Fill Min Thd.: 5 percent          LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled            Short. TTL Prop Tr*: Enabled
AB Sample Multipli*: 1                  AB Adjust Multipli*: 288
Exp Backoff Retry  : Disabled           CSPF On Loose Hop  : Disabled

P2mp Resignal Timer: Disabled           P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled           Static LSP FR Timer: 30 seconds
P2P Max Bypass Ass*: 1000
P2P Active Path Fa*: 10                 P2MP S2l Fast Retr*: 10
ActiveFastRetryTime: Disabled
LSP Counts          Originate           Transit             Terminate
-------------------------------------------------------------------------------
Static LSPs         0                   0                   0
Dynamic LSPs        0                   0                   0
Detour LSPs         0                   0                   0
P2MP S2Ls           0                   0                   0
===============================================================================
* indicates that the corresponding row element may have been truncated.


*A:Dut-C# /show router mpls status

===============================================================================
MPLS Status
===============================================================================
Admin Status       : Up                 Oper Status        : Up
Oper Down Reason   : n/a
FR Object          : Enabled            Resignal Timer     : Disabled
Hold Timer         : 1 seconds          Next Resignal      : N/A
Srlg Frr           : Disabled           Srlg Frr Strict    : Disabled
Dynamic Bypass     : Disabled           User Srlg Database : Disabled
Least Fill Min Thd.: 5 percent          LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled            Short. TTL Prop Tr*: Enabled
AB Sample Multipli*: 1                  AB Adjust Multipli*: 288
Exp Backoff Retry  : Disabled           CSPF On Loose Hop  : Disabled
Lsp Init RetryTime*: 30 seconds

P2mp Resignal Timer: Disabled           P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled           Static LSP FR Timer: 30 seconds
P2P Max Bypass Ass*: 1000
P2PActPathFastRetry: Disabled           P2MP S2L Fast Retry: Disabled

LSP Counts          Originate           Transit             Terminate
-------------------------------------------------------------------------------
Static LSPs         0                   0                   0
Dynamic LSPs        3                   0                   2
```

```
Detour LSPs         0                   0                   0
P2MP S2Ls           0                   0                   0
===============================================================================
* indicates that the corresponding row element may have been truncated.

show router mpls status
===============================================================================
MPLS Status
===============================================================================
Admin Status       : Down               Oper Status        : Down
Oper Down Reason   : adminDown
FR Object          : Enabled            Resignal Timer     : Disabled
Hold Timer         : 1 seconds          Next Resignal      : N/A
Srlg Frr           : Disabled           Srlg Frr Strict    : Disabled
Dynamic Bypass     : Enabled            User Srlg Database : Disabled
Least Fill Min Thd.: 5 percent          LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled            Short. TTL Prop Tr*: Enabled
AB Sample Multipli*: 1                  AB Adjust Multipli*: 288
Exp Backoff Retry  : Disabled           CSPF On Loose Hop  : Disabled

P2mp Resignal Timer: Disabled           P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled           Static LSP FR Timer: 30 seconds
P2P Max Bypass Ass*: 1000
P2P Active Path Fa*: 10                 P2MP S2l Fast Retr*: 10
ActiveFastRetryTime: Disabled

LSP Counts          Originate           Transit             Terminate
-------------------------------------------------------------------------------
Static LSPs         0                   0                   0
Dynamic LSPs        0                   0                   0
Detour LSPs         0                   0                   0
P2MP S2Ls           0                   0                   0
===============================================================================
* indicates that the corresponding row element may have been truncated.

*A:SRU4>config>router>mpls# show router mpls status
===============================================================================================
MPLS Status
===============================================================================================
Admin Status       : Up                 Oper Status        : Up
Oper Down Reason   : n/a
FR Object          : Enabled            Resignal Timer     : 30 minutes
Hold Timer         : 1 seconds          Next Resignal      : 13 minutes
Srlg Frr           : Enabled            Srlg Frr Strict    : Enabled
Dynamic Bypass     : Enabled            User Srlg Database : Disabled
Least Fill Min Thd.: 5 percent          LeastFill ReoptiThd: 10 percent
Short. TTL Prop Lo*: Enabled            Short. TTL Prop Tr*: Enabled

P2mp Resignal Timer: Disabled           P2mp Next Resignal : N/A
Sec FastRetryTimer : Disabled           Static LSP FR Timer: 30 seconds

LSP Counts          Originate           Transit             Terminate
-----------------------------------------------------------------------------------------------
Static LSPs         0                   136                 0
Dynamic LSPs        140                 499                 1626
Detour LSPs         0                   0                   0
P2MP S2Ls           0                   0                   0
===============================================================================================
* indicates that the corresponding row element may have been truncated.
*A:SRU4>config>router>mpls#
```

tp-lsp

Syntax **tp-lsp** [*lsp-name*] [**status** {**up | down**}] [**from** *ip-address* **| to** *ip-address*] [**detail**]
tp-lsp [*lsp-name*] **path** [**protecting | working**] [**detail**]
tp-lsp [*lsp-name*] **protection**

Context show>router>mpls

Parameters *lsp-name* — Specifies the LSP name up to 32 characters; accepts * as a wildcard character

path — Displays LSP path information.

protection — Displays LSP protection information.

up | down — Specifies the state of the LSP.

Output

```
*A:mlstp-dutA# show router mpls tp-lsp
path
protection
to <a.b.c.d>
<lsp-name>
 "lsp-32"  "lsp-33"  "lsp-34"  "lsp-35"  "lsp-36"  "lsp-37"  "lsp-38"  "lsp-39"
 "lsp-40"  "lsp-41"
status {up|down}
from <ip-address>
detail

*A:mlstp-dutA# show router mpls tp-lsp "lsp-
"lsp-32"  "lsp-33"  "lsp-34"  "lsp-35"  "lsp-36"  "lsp-37"  "lsp-38"  "lsp-39"
"lsp-40"  "lsp-41"
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32"

===============================================================================
MPLS MPLS-TP LSPs (Originating)
===============================================================================
LSP Name                          To               Tun     Protect   Adm  Opr
                                                   Id      Path
-------------------------------------------------------------------------------
lsp-32                            0.0.3.234        32      No        Up   Up
-------------------------------------------------------------------------------
LSPs : 1
===============================================================================
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" detail

===============================================================================
MPLS MPLS-TP LSPs (Originating) (Detail)
===============================================================================
-------------------------------------------------------------------------------
Type : Originating
-------------------------------------------------------------------------------
LSP Name    : lsp-32
LSP Type    : MplsTp                          LSP Tunnel ID  : 32
From Node Id: 0.0.3.233+                      To Node Id     : 0.0.3.234
Adm State   : Up                              Oper State     : Up
LSP Up Time : 0d 04:50:47                     LSP Down Time  : 0d 00:00:00
Transitions : 1                               Path Changes   : 2
DestGlobalId: 42                              DestTunnelNum  : 32


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

```
*A:mlstp-dutA#  show router mpls tp-lsp path

===============================================================================
MPLS-TP LSP Path Information
===============================================================================
LSP Name      : lsp-32                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       32        32        AtoB_1          Up     Down
Protect                       2080      2080      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-33                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       33        33        AtoB_1          Up     Down
Protect                       2082      2082      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-34                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       34        34        AtoB_1          Up     Down
Protect                       2084      2084      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-35                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       35        35        AtoB_1          Up     Down
Protect                       2086      2086      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-36                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       36        36        AtoB_1          Up     Down
Protect                       2088      2088      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-37                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       37        37        AtoB_1          Up     Down
Protect                       2090      2090      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-38                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up
```

```
-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       38        38        AtoB_1          Up     Down
Protect                       2092      2092      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-39                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       39        39        AtoB_1          Up     Down
Protect                       2094      2094      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-40                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       40        40        AtoB_1          Up     Down
Protect                       2096      2096      AtoC_1          Up     Up
===============================================================================
LSP Name      : lsp-41                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       41        41        AtoB_1          Up     Down
Protect                       2098      2098      AtoC_1          Up     Up

*A:mlstp-dutA#  show router mpls tp-lsp "lsp-32" path working

===============================================================================
MPLS-TP LSP Working Path Information
    LSP: "lsp-32"
===============================================================================
LSP Name      : lsp-32                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Working                       32        32        AtoB_1          Up     Down
===============================================================================
*A:mlstp-dutA#  show router mpls tp-lsp "lsp-32" path protect

===============================================================================
MPLS-TP LSP Protect Path Information
    LSP: "lsp-32"
===============================================================================
LSP Name      : lsp-32                          To            : 0.0.3.234
Admin State   : Up                              Oper State    : Up

-------------------------------------------------------------------------------
Path        NextHop           InLabel   OutLabel  Out I/F         Admin  Oper
-------------------------------------------------------------------------------
Protect                       2080      2080      AtoC_1          Up     Up
```

```
===============================================================================
*A:mlstp-dutA#  show router mpls tp-lsp "lsp-32" path protect detail

===============================================================================
MPLS-TP LSP Protect Path Information
    LSP: "lsp-32" (Detail)
===============================================================================
LSP Name      : lsp-32                              To            : 0.0.3.234
Admin State   : Up                                  Oper State    : Up

Protect path information
-------------------------------------------------------------------------------
Path Type     : Protect                             LSP Num       : 2
Path Admin    : Up                                  Path Oper     : Up
Out Interface : AtoC_1                              Next Hop Addr : n/a
In Label      : 2080                                Out Label     : 2080
Path Up Time  : 0d 04:52:17                         Path Dn Time  : 0d 00:00:00
Active Path   : Yes                                 Active Time   : 0d 00:52:56

MEP information
MEP State     : Up                                  BFD           : cc
OAM Templ     : privatebed-oam-template             CC Status     : inService
                                                    CV Status     : unknown
Protect Templ : privatebed-protection-template      WTR Count Down: 0 seconds
RX PDU        : SF (1,1)                            TX PDU        : SF (1,1)
Defects       :
===============================================================================
*A:mlstp-dutA#  show router mpls tp-lsp "lsp-32" path working detail

===============================================================================
MPLS-TP LSP Working Path Information
    LSP: "lsp-32" (Detail)
===============================================================================
LSP Name      : lsp-32                              To            : 0.0.3.234
Admin State   : Up                                  Oper State    : Up

Working path information
-------------------------------------------------------------------------------
Path Type     : Working                             LSP Num       : 1
Path Admin    : Up                                  Path Oper     : Down
Down Reason   : ccFault ifDn
Out Interface : AtoB_1                              Next Hop Addr : n/a
In Label      : 32                                  Out Label     : 32
Path Up Time  : 0d 00:00:00                         Path Dn Time  : 0d 00:53:01
Active Path   : No                                  Active Time   : n/a

MEP information
MEP State     : Up                                  BFD           : cc
OAM Templ     : privatebed-oam-template             CC Status     : outOfService
                                                    CV Status     : unknown
===============================================================================
*A:mlstp-dutA#


*A:mlstp-dutA#  show router mpls tp-lsp protection

===============================================================================
MPLS-TP LSP Protection Information
Legend: W-Working, P-Protect,
===============================================================================
LSP Name                      Admin Oper  Path    Ingr/Egr      Act. Rx PDU
```

```
                              State State   State Label         Path Tx PDU
-------------------------------------------------------------------------------
lsp-32                        Up    Up    W Down      32/32     No   SF (1,1)
                                          P Up      2080/2080   Yes  SF (1,1)
lsp-33                        Up    Up    W Down      33/33     No   SF (1,1)
                                          P Up      2082/2082   Yes  SF (1,1)
lsp-34                        Up    Up    W Down      34/34     No   SF (1,1)
                                          P Up      2084/2084   Yes  SF (1,1)
lsp-35                        Up    Up    W Down      35/35     No   SF (1,1)
                                          P Up      2086/2086   Yes  SF (1,1)
lsp-36                        Up    Up    W Down      36/36     No   SF (1,1)
                                          P Up      2088/2088   Yes  SF (1,1)
lsp-37                        Up    Up    W Down      37/37     No   SF (1,1)
                                          P Up      2090/2090   Yes  SF (1,1)
lsp-38                        Up    Up    W Down      38/38     No   SF (1,1)
                                          P Up      2092/2092   Yes  SF (1,1)
lsp-39                        Up    Up    W Down      39/39     No   SF (1,1)
                                          P Up      2094/2094   Yes  SF (1,1)
lsp-40                        Up    Up    W Down      40/40     No   SF (1,1)
                                          P Up      2096/2096   Yes  SF (1,1)
lsp-41                        Up    Up    W Down      41/41     No   SF (1,1)
                                          P Up      2098/2098   Yes  SF (1,1)
-------------------------------------------------------------------------------
No. of MPLS-TP LSPs: 10
===============================================================================
```

Show Router BFD session Commands

session

Syntax **session** {**ipv4**|**ipv6**} **detail** [**lag** *lag-id*] **lag-port** *port-id*
session lsp-name *Lsp Name*
session lsp-rsvp {**head**|**tail**}
session src *ip-address/link-local address* **dest** *ip-address* | *link-local address* **detail lsp-rsvp** {**head**|**tail**} **tunnel-id** *tunnel-id* **lsp-id** *lsp-id*
session mpls-tp
session lsp-name *Lsp Name* [**link-type** {**cc-only**|**cc-cv**}] **detail**
session p2mp-interface *interface-name* **detail**
session src ip-*address/link-local address* **detail lsp-rsvp** {**head**|**tail**} **rsvp-session-name** [*256 chars max*]
session [**src** *ip-address/link-local address*] [**ipv4**|**ipv6**]
session src *ip-address/link-local address* **dest** *ip-address* | **link-local** *address*
session src *ip-address/link-local address* **detail**
session summary
session type *type* [**ipv4**|**ipv6**]

Context show>router>bfd

Description This command display BFD session information.

Parameters **ipv4**|**ipv6 —**

detail — Displays detailed information.

lag *lag-id* **—** Displays information about the specified LAG ID.

lag-port *port-id* **—** Displays information about the specified LAG port ID.

lsp-name Lsp Name — Displays information about the specified LSP name.

lsp-rsvp {**head**|**tail**} **—** Displays a summary of all head or tail RSVP LSP BFD sessions. The information in this **show** command should be the same as the **show>router>bfd>session** commands, but filtered for sessions associated with RSVP LSPs. The protocol field of the output should indicate **lsp-rsvp**.

src *ip-address/link-local address* **—** Displays information about the specified source IPaddress or link local address.

dest *ip-address* | *link-local address* **—** Displays information about the specified destination IPaddress or link local address.

tunnel-id *tunnel-id* **—** Displays information about the specified tunnel.

lsp-id *lsp-id* **—** Displays information about the specified LSP.

p2mp-interface *interface-name* **—** Displays information about the specified P2MP interface

rsvp-session-name [*256 chars max*] **—** Displays a summary of all head or tail RSVP LSP BFD sessions. The information in this **show** command should be the same as the

show>router>bfd>session commands, but filtered for sessions associated with RSVP LSPs. The protocol field of the output should indicate **lsp-rsvp**.

type *type* **—** Specifies the type.

Values **iom**, **central**, **cpm-np**

summary — Displays summarized information.

Show RSVP Commands

interface

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

Context show>router>rsvp

Description This command shows RSVP interfaces.

ip-int-name — The name of the network IP interface. An interface name cannot be in the form of an IP address. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

ip-address — The system or network interface IP address.

statistics — Displays the RSVP interface name and counts of various RSVP packets sent and received on the interface.

detail — Displays detailed information.

Output **RSVP Interface Output —** The following table describes RSVP interface output fields.

Label	Description
Interface	The name of the IP interface.
Total Sessions	The total number of RSVP sessions on this interface. This count includes sessions that are active as well as sessions that have been signaled but a response has not yet been received.
Active Sessions	The total number of active RSVP sessions on this interface.
Total BW (Mbps)	The amount of bandwidth in megabits per second (Mbps) available to be reserved for the RSVP protocol on the interface.
Resv BW (Mbps)	The amount of bandwidth in mega-bits per seconds (Mbps) reserved on this interface. A value of zero (0) indicates that no bandwidth is reserved.
Adm	Down – The RSVP interface is administratively disabled. Up – The RSVP interface is administratively enabled.
Bfd	Yes – BFD is enabled on the RSVP interface. No – BFD is disabled on the RSVP interface.
Opr	Down – The RSVP interface is operationally down. Up – The RSVP interface is operationally up.
Port ID	Specifies the physical port bound to the interface.

Label	Description (Continued)
Active Resvs	The total number of active RSVP sessions that have reserved bandwidth.
Subscription	Specifies the percentage of the link bandwidth that RSVP can use for reservation. When the value is zero (0), no new sessions are permitted on this interface.
Port Speed	Specifies the speed for the interface.
Unreserved BW	Specifies the amount of unreserved bandwidth.
Reserved BW	Specifies the amount of bandwidth in megabits per second (Mbps) reserved by the RSVP session on this interface. A value of zero (0) indicates that no bandwidth is reserved.
Total BW	Specifies the amount of bandwidth in megabits per second (Mbps) available to be reserved for the RSVP protocol on this interface.
Aggregate	Aggregate messages are used to pack multiple RSVP messages into a single packet to reduce the network overhead. When the value is true, RSVP negotiates with each neighbor and gets consensus before sending aggregate messages.
Hello Interval	Specifies the length of time, in seconds, between the hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network. When the value is zero (0), the sending of hello messages is disabled.
Refresh Time	Specifies the interval between the successive Path and Resv refresh messages. RSVP declares the session down after it misses ((keep-multiplier + 0.5) * 1.5 * refresh-time)) consecutive refresh messages.
Hello Timeouts	The total number of hello messages that timed out on this RSVP interface.
Neighbors	The IP address of the RSVP neighbor.
Sent	The total number of error free RSVP packets that have been transmitted on the RSVP interface.
Recd	The total number of error free RSVP packets received on the RSVP interface.
Total Packets	The total number of RSVP packets, including errors, received on the RSVP interface.
Bad Packets	The total number of RSVP packets with errors transmitted on the RSVP interface.
Paths	The total number of RSVP PATH messages received on the RSVP interface.
Path Errors	The total number of RSVP PATH ERROR messages transmitted on the RSVP interface.

Label	Description (Continued)
Path Tears	The total number of RSVP PATH TEAR messages received on the RSVP interface.
Resvs	The total number of RSVP RESV messages received on the RSVP interface.
Resv Confirms	The total number of RSVP RESV CONFIRM messages received on the RSVP interface.
Resv Errors	Total RSVP RESV ERROR messages received on RSVP interface.
Resv Tears	Total RSVP RESV TEAR messages received on RSVP interface.
Refresh Summaries	Total RSVP RESV summary refresh messages received on interface.
Refresh Acks	Total RSVP RESV acknowledgement messages received when refresh reduction is enabled on the RSVP interface.
Bundle Packets	Total RSVP RESV bundled packets received on the RSVP interface.
Hellos	Total RSVP RESV HELLO REQ messages received on the interface.

Sample Output

```
*A:Dut-A>config>router>mpls>lsp$ /show router rsvp interface "ip-10.10.1.1" detail

===============================================================================
RSVP Interface (Detailed) : ip-10.10.1.1
===============================================================================
-------------------------------------------------------------------------------
Interface : ip-10.10.1.1
-------------------------------------------------------------------------------
Interface         : ip-10.10.1.1
Port ID           : 1/1/1
Admin State       : Up                  Oper State        : Up
Active Sessions   : 1                   Active Resvs      : 0
Total Sessions    : 1
Subscription      : 100 %               Port Speed        : 100 Mbps
Total BW          : 100 Mbps            Aggregate         : Dsabl
Hello Interval    : n/a                 Hello Timeouts    : n/a
Authentication    : Disabled
Auth Rx Seq Num   : n/a                 Auth Key Id       : n/a
Auth Tx Seq Num   : n/a                 Auth Win Size     : n/a
Refresh Reduc.    : Disabled            Reliable Deli.    : Disabled
Bfd Enabled       : n/a                 Graceful Shut.    : Disabled
ImplicitNullLabel : Disabled*           GR helper         : n/a

Percent Link Bandwidth for Class Types*
Link Bw CT0       : 100                 Link Bw CT4       : 0
Link Bw CT1       : 0                   Link Bw CT5       : 0
Link Bw CT2       : 0                   Link Bw CT6       : 0
Link Bw CT3       : 0                   Link Bw CT7       : 0


Bandwidth Constraints for Class Types (Kbps)
BC0               : 100000              BC4               : 0
```

```
BC1              : 0                  BC5              : 0
BC2              : 0                  BC6              : 0
BC3              : 0                  BC7              : 0

Bandwidth for TE Class Types (Kbps)
TE0->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE1->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE2->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE3->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE4->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE5->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE6->  Resv. Bw   : 0                  Unresv. Bw       : 100000
TE7->  Resv. Bw   : 0                  Unresv. Bw       : 100000

IGP Update
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100  *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0  *
IGP Update Pending : No
Next Update        : N/A
Neighbors      : 10.20.1.2
* indicates inherited values
===============================================================================*A:Dut-A>con-
fig>router>mpls>lsp$
```

```
*A:SRU4>show>router>rsvp# interface
===============================================================================
RSVP Interfaces
===============================================================================
Interface                        Total    Active    Total BW  Resv BW   Adm Opr
                                 Sessions Sessions  (Mbps)    (Mbps)
-------------------------------------------------------------------------------
system                           -        -         -         -         Up  Up
aps-1                            0        0         6012      0         Up  Up
aps-2                            0        0         6010      0         Up  Up
aps-3                            0        0         6010      0         Up  Up
sr4-1                            0        0         6010      0         Up  Up
ess-7-1                          9        9         100       0         Up  Up
ess-7-2                          7        7         100       0         Up  Up
ess-7-3                          4        4         100       0         Up  Up
ess-7-4                          0        0         800       0         Up  Up
ess-7-5                          0        0         800       0         Up  Up
ess-7-6                          0        0         800       0         Up  Up
hubA                             0        0         100       0         Up  Up
germ-1                           0        0         1000      0         Up  Up
src-1.1                          3        3         100       0         Up  Up
src-1.2                          2        2         100       0         Up  Up
src-1.3                          3        3         100       0         Up  Up
src-1.4                          5        5         100       0         Up  Up
...
g7600                            0        0         1000      0         Up  Up
m160                             481      481       1000      82        Up  Up
-------------------------------------------------------------------------------
Interfaces : 35
===============================================================================
*A:SRU4>show>router>rsvp#

*A:SRU4>show>router>rsvp# interface statistics
===============================================================================
RSVP Interface (statistics)
```

```
===============================================================================
-------------------------------------------------------------------------------
Interface system
-------------------------------------------------------------------------------
Interface                   : Up
Total Packets        (Sent) : 0                    (Recd.): 0
Bad Packets          (Sent) : 0                    (Recd.): 0
Paths                (Sent) : 0                    (Recd.): 0
Path Errors          (Sent) : 0                    (Recd.): 0
Path Tears           (Sent) : 0                    (Recd.): 0
Resvs                (Sent) : 0                    (Recd.): 0
Resv Confirms        (Sent) : 0                    (Recd.): 0
Resv Errors          (Sent) : 0                    (Recd.): 0
Resv Tears           (Sent) : 0                    (Recd.): 0
Refresh Summaries    (Sent) : 0                    (Recd.): 0
Refresh Acks         (Sent) : 0                    (Recd.): 0
Bundle Packets       (Sent) : 0                    (Recd.): 0
Hellos               (Sent) : 0                    (Recd.): 0
Auth Errors          (Sent) : 0                    (Recd.): 0
-------------------------------------------------------------------------------
...
-------------------------------------------------------------------------------
Interface m160
-------------------------------------------------------------------------------
Interface                   : Up
Total Packets        (Sent) : 883643               (Recd.): 3052503
Bad Packets          (Sent) : 0                    (Recd.): 0
Paths                (Sent) : 592153               (Recd.): 373610
Path Errors          (Sent) : 464                  (Recd.): 30716
Path Tears           (Sent) : 29563                (Recd.): 3480
Resvs                (Sent) : 93970                (Recd.): 2518660
Resv Confirms        (Sent) : 0                    (Recd.): 0
Resv Errors          (Sent) : 136815               (Recd.): 54115
Resv Tears           (Sent) : 13338                (Recd.): 71922
Refresh Summaries    (Sent) : 0                    (Recd.): 0
Refresh Acks         (Sent) : 0                    (Recd.): 0
Bundle Packets       (Sent) : 0                    (Recd.): 0
Hellos               (Sent) : 17340                (Recd.): 0
Auth Errors          (Sent) : 0                    (Recd.): 0
===============================================================================
*A:SRU4>show>router>rsvp#


*A:SRU4>show>router>rsvp# interface "sr4-1" statistics
===============================================================================
RSVP Interface : sr4-1 (statistics)
===============================================================================
-------------------------------------------------------------------------------
Interface sr4-1
-------------------------------------------------------------------------------
Interface                   : Up
Total Packets        (Sent) : 33100                (Recd.): 20405
Bad Packets          (Sent) : 0                    (Recd.): 0
Paths                (Sent) : 0                    (Recd.): 1833
Path Errors          (Sent) : 1783                 (Recd.): 9
Path Tears           (Sent) : 0                    (Recd.): 1157
Resvs                (Sent) : 76                   (Recd.): 0
Resv Confirms        (Sent) : 0                    (Recd.): 0
Resv Errors          (Sent) : 0                    (Recd.): 0
Resv Tears           (Sent) : 1                    (Recd.): 0
Refresh Summaries    (Sent) : 4                    (Recd.): 33
```

```
Refresh Acks          (Sent) : 1520                (Recd.): 4
Bundle Packets        (Sent) : 0                   (Recd.): 0
Hellos                (Sent) : 29716               (Recd.): 17369
Auth Errors           (Sent) : 0                   (Recd.): 0
===============================================================================
*A:SRU4>show>router>rsvp#

*A:SRU4>show>router>rsvp#  interface detail
===============================================================================
RSVP Interfaces (Detailed)
===============================================================================
-------------------------------------------------------------------------------
Interface : system
-------------------------------------------------------------------------------
Interface         : system
Port ID           : system
Admin State       : Up                  Oper State        : Up
Active Sessions   : 0                   Active Resvs      : 0
Total Sessions    : 0
Subscription      : 100 %               Port Speed        : 0 Mbps
Total BW          : 0 Mbps              Aggregate         : Dsabl
Hello Interval    : 3000 ms             Hello Timeouts    : 0
Authentication    : Disabled
Auth Rx Seq Num   : n/a                 Auth Key Id       : n/a
Auth Tx Seq Num   : n/a                 Auth Win Size     : n/a
Refresh Reduc.    : Enabled             Reliable Deli.    : Disabled
Bfd Enabled       : No                  Graceful Shut.    : Disabled
ImplicitNullLabel : Disabled*

Percent Link Bandwidth for Class Types*
Link Bw CT0       : 100                 Link Bw CT4       : 0
Link Bw CT1       : 0                   Link Bw CT5       : 0
Link Bw CT2       : 0                   Link Bw CT6       : 0
Link Bw CT3       : 0                   Link Bw CT7       : 0

Bandwidth Constraints for Class Types (Kbps)
BC0               : 0                   BC4               : 0
BC1               : 0                   BC5               : 0
BC2               : 0                   BC6               : 0
BC3               : 0                   BC7               : 0

Bandwidth for TE Class Types (Kbps)
TE0->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE1->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE2->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE3->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE4->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE5->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE6->  Resv. Bw   : 0                   Unresv. Bw        : 0
TE7->  Resv. Bw   : 0                   Unresv. Bw        : 0

IGP Update
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100  *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0  *
IGP Update Pending : No
Next Update        : N/A
No Neighbors.
-------------------------------------------------------------------------------
Interface : m160
-------------------------------------------------------------------------------
Interface         : m160
```

```
Port ID           : 3/2/1
Admin State       : Up                  Oper State        : Up
Active Sessions   : 218                 Active Resvs      : 0
Total Sessions    : 517
Subscription      : 1000 %              Port Speed        : 100 Mbps
Total BW          : 1000 Mbps           Aggregate         : Dsabl
Hello Interval    : 3000 ms             Hello Timeouts    : 0
Authentication    : Disabled
Auth Rx Seq Num   : n/a                 Auth Key Id       : n/a
Auth Tx Seq Num   : n/a                 Auth Win Size     : n/a
Refresh Reduc.    : Enabled             Reliable Deli.    : Disabled
Bfd Enabled       : No                  Graceful Shut.    : Disabled
ImplicitNullLabel : Disabled*

Percent Link Bandwidth for Class Types*
Link Bw CT0       : 100                 Link Bw CT4       : 0
Link Bw CT1       : 0                   Link Bw CT5       : 0
Link Bw CT2       : 0                   Link Bw CT6       : 0
Link Bw CT3       : 0                   Link Bw CT7       : 0

Bandwidth Constraints for Class Types (Kbps)
BC0               : 1000000             BC4               : 0
BC1               : 0                   BC5               : 0
BC2               : 0                   BC6               : 0
BC3               : 0                   BC7               : 0

Bandwidth for TE Class Types (Kbps)
TE0->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE1->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE2->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE3->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE4->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE5->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE6->  Resv. Bw   : 0                   Unresv. Bw        : 1000000
TE7->  Resv. Bw   : 0                   Unresv. Bw        : 1000000

IGP Update
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100  *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0  *
IGP Update Pending : No
Next Update        : N/A
Neighbors      : 10.100.30.20
* indicates inherited values
===============================================================================
*A:SRU4>show>router>rsvp#
```

neighbor

Syntax **neighbor** [*ip-address*] [**detail**]

Context show>router>rsvp

Description This command shows neighbor information.

Parameters *ip-address* — Displays RSVP information about the specified IP address.

detail — Displays detailed information.**Sample Output**

```
*A:Dut-A>config>router>mpls>lsp$ /show router rsvp neighbor
===============================================================================
RSVP Neighbors
===============================================================================
Legend :
    LR - Local Refresh Reduction          RR - Remote Refresh Reduction
    LD - Local Reliable Delivery          RM - Remote Node supports Message ID
    LG - Local Graceful Restart           RG - Remote Graceful Restart
===============================================================================
Neighbor        Interface                       Hello  Last Oper     Flags
                                                      Change
===============================================================================
10.20.1.2       ip-10.10.1.1                    N/A  0d 00:00:44
10.20.1.3       ip-10.10.2.1                    N/A  0d 00:00:44
-------------------------------------------------------------------------------
Neighbors : 2
-------------------------------------------------------------------------------
*A:Dut-A>config>router>mpls>lsp$


*A:SR1# show router rsvp neighbor detail
===============================================================================================
RSVP Neighbors (Detailed)
===============================================================================================
Legend :
    LR - Local Refresh Reduction          RR - Remote Refresh Reduction
    LD - Local Reliable Delivery          RM - Remote Node supports Message ID
    LG - Local Graceful Restart           RG - Remote Graceful Restart
===============================================================================================
-----------------------------------------------------------------------------------------------
Neighbor : 30.30.30.2
-----------------------------------------------------------------------------------------------
Interface          : int_SR1_SR3        Hello State        : Up
Last Oper Change   : 0d 00:01:02        Flags              :
Source Instance    : 0x6c8b7            Dst. Instance      : 0x530f8e0
Hello Refresh Time : 2 secs             Hello Timeout Time : 8 secs
Hello Timeout Cnt  : 0                  Inst. Mismatch Cnt : 0
Srefresh Time Rem. : 0 secs             Epoch Num Rx       : 0
Max Msg Id Rx      : 0                  Out of order Msgs  : 0
Retransmitted Msgs : 0                  GR Helper          : Disabled
GR Proc Invoked Cnt: 0                  GR Helper State    : None
GR Helper Time Rem : N/A                GR Nbr Restart Cap : N/A
GR Nbr Restart Time: N/A                GR Nbr Recvry Time : N/A
===============================================================================================

*B:edge13# show router rsvp neighbor
===============================================================================
RSVP Neighbors
===============================================================================
Legend :
    LR - Local Refresh Reduction          RR - Remote Refresh Reduction
    LD - Local Reliable Delivery          RM - Remote Node supports Message ID
    LG - Local Graceful Restart            RG - Remote Graceful Restart
===============================================================================
Neighbor        Interface               Hello  Last Oper     Flags Change
===============================================================================
10.11.101.2     e13c2_1                 Up   1d 00:52:56   LR RR LD RM

LG RG
```

```
10.11.102.2     e13c2_2                 Up   1d 00:52:56   LR RR LD RM
10.11.103.3     e13s1_1                 Up   1d 00:52:54   LR RR LD RM

LG
10.11.104.3     e13s1_2                 Up   1d 00:52:56
10.11.105.4     e13s2_1                 Up   1d 00:52:56
10.11.106.4     e13s2_2                 Up   1d 00:52:56
-------------------------------------------------------------------------------
Neighbors : 6
```

session

Syntax **session** *session-type* [**from** *ip-address* **| to** *ip-address*| **lsp-name** *name*] [**status** {**up | down**}] [**detail**]

Context show>router>rsvp

Description This command shows RSVP session information.

Parameters **session** *session-type* — Specifies the session type.

Values originate, transit, terminate, detour, detour-transit, detour-terminate, bypass-tunnel

from *ip-address* — Specifies the IP address of the originating router.

to *ip-address* — Specifies the IP address of the egress router.

lsp-name *name* — Specifies the name of the LSP used in the path.

status up — Specifies to display a session that is operationally up.

status down — Specifies to display a session that is operationally down.

detail — Displays detailed information.

Output **RSVP Session Output —** The following table describers RSVP session output fields.

Label	Description
From	The IP address of the originating router.
To	The IP address of the egress router.
Tunnel ID	The IP address of the tunnel's ingress node supporting this RSVP session.
LSP ID	The ID assigned by the agent to this RSVP session.
Name	The administrative name assigned to the RSVP session by the agent.
State	Down – The operational state of this RSVP session is down. Up – The operational state of this RSVP session is up.

Sample Output

```
*A:SRU4>show>router>rsvp#   session
```

```
===============================================================================
RSVP Sessions
===============================================================================
From            To              Tunnel LSP   Name                           State
                                ID     ID
-------------------------------------------------------------------------------
110.20.1.5      110.20.1.4      18     27648 b4-1::b4-1                     Up
110.20.1.5      110.20.1.4      1      37902 gsr::gsr                       Up
110.20.1.5      10.20.1.22      11     53760 to_10_20_1_22_cspf::to_10_2* Up
110.20.1.4      10.20.1.20      146    17920 to_10_20_1_20_cspf_3::to_10* Up
110.20.1.4      10.20.1.20      145    34816 to_10_20_1_20_cspf_2::to_10* Up
110.20.1.4      10.20.1.20      147    45056 to_10_20_1_20_cspf_4::to_10* Up
110.20.1.4      10.20.1.20      148    6656  to_10_20_1_20_cspf_5::to_10* Up
110.20.1.4      10.20.1.20      149    58880 to_10_20_1_20_cspf_6::to_10* Up
110.20.1.4      10.20.1.20      150    13312 to_10_20_1_20_cspf_7::to_10* Up
110.20.1.4      10.20.1.20      152    40448 to_10_20_1_20_cspf_9::to_10* Up
110.20.1.4      10.20.1.20      154    27648 to_10_20_1_20_cspf_11::to_1* Up
110.20.1.4      10.20.1.20      155    12288 to_10_20_1_20_cspf_12::to_1* Up
110.20.1.4      10.20.1.20      151    46080 to_10_20_1_20_cspf_8::to_10* Up
110.20.1.4      10.20.1.20      153    512   to_10_20_1_20_cspf_10::to_1* Up
110.20.1.4      10.20.1.22      164    62464 to_10_20_1_22_cspf_2::to_10* Up
110.20.1.4      10.20.1.20      156    37888 to_10_20_1_20_cspf_13::to_1* Up
110.20.1.4      10.20.1.20      157    24064 to_10_20_1_20_cspf_14::to_1* Up
110.20.1.4      10.20.1.20      158    19968 to_10_20_1_20_cspf_15::to_1* Up
110.20.1.4      10.20.1.20      161    59904 to_10_20_1_20_cspf_18::to_1* Up
...
110.20.1.3      110.20.1.4      54     23088 to_110_20_1_4_cspf_4::to_11* Up
-------------------------------------------------------------------------------
Sessions : 1976
===============================================================================
* indicates that the corresponding row element may have been truncated.
*A:SRU4>show>router>rsvp#
```

```
A:ALA-12# show router rsvp session lsp-name A_C_2::A_C_2 status up
===============================================================================
RSVP Sessions
===============================================================================
From            To              Tunnel LSP   Name                           State
                                ID     ID
-------------------------------------------------------------------------------
10.20.1.1       10.20.1.3       2      40    A_C_2::A_C_2                   Up
-------------------------------------------------------------------------------
Sessions : 1
===============================================================================
A:ALA-12#
```

```
*A:SRU4>show>router>rsvp#   session detail
===============================================================================
RSVP Sessions (Detailed)
===============================================================================
-------------------------------------------------------------------------------
LSP : b4-1::b4-1
-------------------------------------------------------------------------------
From           : 110.20.1.5             To             : 110.20.1.4
Tunnel ID      : 18                     LSP ID         : 27648
Style          : FF                     State          : Up
Session Type   : Terminate
In Interface   : 3/2/1                  Out Interface  : n/a
In Label       : 131071                 Out Label      : n/a
```

```
Previous Hop   : 10.100.30.20           Next Hop       : n/a
SetupPriority  : 7                     Hold Priority  : 0
Class Type     : 0
SubGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 7497                  Path Sent      : 0
Resv Recd      : 0                     Resv Sent      : 1757

Summary messages:
SPath Recd     : 0                     SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 0
-------------------------------------------------------------------------------
LSP : gsr::gsr
-------------------------------------------------------------------------------
From           : 110.20.1.5            To             : 110.20.1.4
Tunnel ID      : 1                     LSP ID         : 37902
Style          : FF                    State          : Up
Session Type   : Terminate
In Interface   : 3/2/7                 Out Interface  : n/a
In Label       : 128547                Out Label      : n/a
Previous Hop   : 160.60.60.2           Next Hop       : n/a
SetupPriority  : 7                     Hold Priority  : 0
Class Type     : 0
SubGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 5225                  Path Sent      : 0
Resv Recd      : 0                     Resv Sent      : 1741

Summary messages:
SPath Recd     : 0                     SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 0
-------------------------------------------------------------------------------
...
-------------------------------------------------------------------------------
From           : 110.20.1.3            To             : 110.20.1.4
Tunnel ID      : 54                    LSP ID         : 23088
Style          : SE                    State          : Up
Session Type   : Terminate
In Interface   : aps-1                 Out Interface  : n/a
In Label       : 130409                Out Label      : n/a
Previous Hop   : 104.104.0.3           Next Hop       : n/a
SetupPriority  : 7                     Hold Priority  : 0
Class Type     : 0
SubGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 1                     Path Sent      : 0
Resv Recd      : 0                     Resv Sent      : 1

Summary messages:
SPath Recd     : 840                   SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 850
===============================================================================
*A:SRU4>show>router


*A:Dut-B# show router rsvp session detour detail
===============================================================================
RSVP Sessions (Detailed)
```

```
===============================================================================
LSP : tof919::1_detour
-------------------------------------------------------------------------------
From           : 10.20.1.2             To             : 10.20.1.4
Tunnel ID      : 919                   LSP ID         : 15441
Style          : SE                    State          : Up
Session Type   : Originate (Detour)
In Interface   : n/a                   Out Interface  : 1/1/2:1
In Label       : n/a                   Out Label      : 129865
Previous Hop   : n/a                   Next Hop       : 10.10.101.4
SetupPriority  : 4                     Hold Priority  : 4
Class Type     : 5
SugGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 0                     Path Sent      : 106
Resv Recd      : 113                   Resv Sent      : 0

Summary messages:
SPath Recd     : 0                     SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 0
===============================================================================
*A:Dut-B#


*A:Dut-C# show router mpls lsp transit detail
===============================================================================
MPLS LSPs (Transit) (Detail)
-------------------------------------------------------------------------------
LSP tof1::sec2
-------------------------------------------------------------------------------
From                : 10.20.1.2             To             : 10.20.1.4
State               : Up
SetupPriority       : 5                     Hold Priority : 5
Class Type          : 5
In Interface        : lag-1:0               In Label       : 131068
Out Interface       : 2/1/2                 Out Label      : 131068
Previous Hop        : 10.10.12.2            Next Hop       : 10.10.11.4
Reserved BW         : 1000 Kbps
===============================================================================
*A:Dut-C#


*A:Dut-B# show router rsvp session detour-terminate detail
===============================================================================
RSVP Sessions (Detailed)
===============================================================================
LSP : tof878::1_detour
-------------------------------------------------------------------------------
From           : 10.20.1.2             To             : 10.20.1.4
Tunnel ID      : 878                   LSP ID         : 14929
Style          : SE                    State          : Up
Session Type   : Terminate (Detour)
In Interface   : lag-1:0               Out Interface  : 1/1/2:8
In Label       : 131069                Out Label      : 127951
Previous Hop   : 10.10.12.3            Next Hop       : 10.10.108.4
SetupPriority  : 4                     Hold Priority  : 4
Class Type     : 5
SugGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0
```

```
Path Recd      : 128                    Path Sent      : 0
Resv Recd      : 125                    Resv Sent      : 124

Summary messages:
SPath Recd     : 0                      SPath Sent     : 0
SResv Recd     : 0                      SResv Sent     : 0
===============================================================================
*A:Dut-B#

*A:Dut-B# show router rsvp session bypass-tunnel detail
===============================================================================
RSVP Sessions (Detailed)
===============================================================================
LSP : bypass-link10.10.108.4
-------------------------------------------------------------------------------
From           : 10.20.1.2              To             : 10.10.109.4
Tunnel ID      : 4003                   LSP ID         : 6
Style          : FF                     State          : Up
Session Type   : Bypass Tunnel
In Interface   : n/a                    Out Interface  : 1/1/2:9
In Label       : n/a                    Out Label      : 124069
Previous Hop   : n/a                    Next Hop       : 10.10.109.4
SetupPriority  : 7                      Hold Priority  : 0
Class Type     : 0
SugGrpOrig ID  : 0                      SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 0                      Path Sent      : 3
Resv Recd      : 4                      Resv Sent      : 0

Summary messages:
SPath Recd     : 0                      SPath Sent     : 0
SResv Recd     : 0                      SResv Sent     : 0
===============================================================================
*A:Dut-B#


*A:Dut-B# show router rsvp session detour detail
===============================================================================
RSVP Sessions (Detailed)
-------------------------------------------------------------------------------
LSP : tof919::1_detour
-------------------------------------------------------------------------------
From           : 10.20.1.2              To             : 10.20.1.4
Tunnel ID      : 919                    LSP ID         : 15441
Style          : SE                     State          : Up
Session Type   : Originate (Detour)
In Interface   : n/a                    Out Interface  : 1/1/2:1
In Label       : n/a                    Out Label      : 129865
Previous Hop   : n/a                    Next Hop       : 10.10.101.4
SetupPriority  : 4                      Hold Priority  : 4
Class Type     : 5
SugGrpOrig ID  : 0                      SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 0                      Path Sent      : 106
Resv Recd      : 113                    Resv Sent      : 0

Summary messages:
SPath Recd     : 0                      SPath Sent     : 0
SResv Recd     : 0                      SResv Sent     : 0
```

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


*A:Dut-B# show router rsvp session detour-transit detail
===============================================================================
RSVP Sessions (Detailed)
-------------------------------------------------------------------------------
LSP : tof919::1_detour
-------------------------------------------------------------------------------
From           : 10.20.1.2             To             : 10.20.1.4
Tunnel ID      : 919                   LSP ID         : 15441
Style          : SE                    State          : Up
Session Type   : Transit (Detour)
In Interface   : lag-1:0               Out Interface  : 1/1/2:6
In Label       : 131071                Out Label      : 127952
Previous Hop   : 10.10.12.3            Next Hop       : 10.10.106.4
SetupPriority  : 4                     Hold Priority  : 4
Class Type     : 5
SugGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 119                   Path Sent      : 123
Resv Recd      : 121                   Resv Sent      : 120

Summary messages:
SPath Recd     : 0                     SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 0
===============================================================================
*A:Dut-B#


*A:Dut-B# show router rsvp session detour-terminate detail
===============================================================================
RSVP Sessions (Detailed)
-------------------------------------------------------------------------------
LSP : tof878::1_detour
-------------------------------------------------------------------------------
From           : 10.20.1.2             To             : 10.20.1.4
Tunnel ID      : 878                   LSP ID         : 14929
Style          : SE                    State          : Up
Session Type   : Terminate (Detour)
In Interface   : lag-1:0               Out Interface  : 1/1/2:8
In Label       : 131069                Out Label      : 127951
Previous Hop   : 10.10.12.3            Next Hop       : 10.10.108.4
SetupPriority  : 4                     Hold Priority  : 4
Class Type     : 5
SugGrpOrig ID  : 0                     SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 128                   Path Sent      : 0
Resv Recd      : 125                   Resv Sent      : 124

Summary messages:
SPath Recd     : 0                     SPath Sent     : 0
SResv Recd     : 0                     SResv Sent     : 0
===============================================================================
*A:Dut-B#


*A:Dut-B# show router rsvp session bypass-tunnel detail
```

```
===============================================================================
RSVP Sessions (Detailed)
-------------------------------------------------------------------------------
LSP : bypass-link10.10.108.4
-------------------------------------------------------------------------------
From           : 10.20.1.2              To             : 10.10.109.4
Tunnel ID      : 4003                   LSP ID         : 6
Style          : FF                     State          : Up
Session Type   : Bypass Tunnel
In Interface   : n/a                    Out Interface  : 1/1/2:9
In Label       : n/a                    Out Label      : 124069
Previous Hop   : n/a                    Next Hop       : 10.10.109.4
SetupPriority  : 7                      Hold Priority  : 0
Class Type     : 0
SugGrpOrig ID  : 0                      SubGrpOrig Addr: 0.0.0.0
P2MP ID        : 0

Path Recd      : 0                      Path Sent      : 3
Resv Recd      : 4                      Resv Sent      : 0

Summary messages:
SPath Recd     : 0                      SPath Sent     : 0
SResv Recd     : 0                      SResv Sent     : 0
===============================================================================
*A:Dut-B#
```

statistics

Syntax **statistics**

Context show>router>rsvp

Description This command displays global statistics in the RSVP instance.

Output **RSVP Statistics Output —** The following table describes RSVP statistics output fields.

Label	Description
PATH Timeouts	The total number of path timeouts.
RESV Timeouts	The total number of RESV timeouts.

Sample Output

```
*A:SR1# /show router rsvp statistics
===============================================================================
RSVP Global Statistics
===============================================================================
PATH Timeouts      : 0                  RESV Timeouts      : 0
GR Helper PATH Tim*: 0                  GR Helper RESV Tim*: 0
===============================================================================
* indicates that the corresponding row element may have been truncated.


*A:SRU4>show>router>rsvp# statistics
===============================================================================
```

```
RSVP Global Statistics
===============================================================================
PATH Timeouts      : 1026               RESV Timeouts      : 182
===============================================================================
*A:SRU4>show>router>rsvp#
```

status

Syntax **rsvp status**

Context show>router>rsvp

Description This command displays RSVP status.

Output **RSVP Status —** The following table describes RSVP status output fields.

Label	Description
Admin Status	Down — RSVP is administratively disabled. Up — RSVP is administratively enabled.
Oper Status	Down — RSVP is operationally down. Up — RSVP is operationally up.
Keep Multiplier	Displays the **keep-multiplier** *number* used by RSVP to declare that a reservation is down or the neighbor is down.
Refresh Time	Displays the **refresh-time** interval, in seconds, between the successive Path and Resv refresh messages.
Message Pacing	Enabled — RSVP messages, specified in the **max-burst** command, are sent in a configured interval, specified in the **period** command. Disabled — Message pacing is disabled. RSVP message transmission is not regulated.
Pacing Period	Displays the time interval, in milliseconds, when the router can send the specified number of RSVP messages specified in the **rsvp max-burst** command.
Max Packet Burst	Displays the maximum number of RSVP messages that are sent in the specified period under normal operating conditions.
Soft Preemption Timer	Displays the time, in seconds, a node holds on to a reservation for which it has triggered the soft preemption procedure.
Rapid Retransmit	Displays the value of the rapid retransmission interval.
Rapid Retry Limit	Displays the rapid retry limit.
Graceful Shutdown	Specifies whether graceful shutdown of the RSVP node is enabled.

Sample Output

```
B:# show router rsvp status
===============================================================================
RSVP Status
===============================================================================
Admin Status       : Down               Oper Status        : Down
Keep Multiplier    : 3                  Refresh Time       : 30 sec
Message Pacing     : Disabled           Pacing Period      : 100 msec
Max Packet Burst   : 650 msgs           Refresh Bypass     : Disabled
Rapid Retransmit   : 5 hmsec            Rapid Retry Limit  : 3
Graceful Shutdown  : Disabled           SoftPreemptionTimer: 300 sec
Implicit Null Label: Disabled           Node-id in RRO     : Exclude
P2P Merge Point Ab*: 10                 P2MP Merge Point A*: 10
DiffServTE AdmModel: Basic
Percent Link Bw CT0: 100                Percent Link Bw CT4: 0
Percent Link Bw CT1: 0                  Percent Link Bw CT5: 0
Percent Link Bw CT2: 0                  Percent Link Bw CT6: 0
Percent Link Bw CT3: 0                  Percent Link Bw CT7: 0
TE0 -> Class Type  : 0                  Priority           : 0
TE1 -> Class Type  : 0                  Priority           : 1
TE2 -> Class Type  : 0                  Priority           : 2
TE3 -> Class Type  : 0                  Priority           : 3
TE4 -> Class Type  : 0                  Priority           : 4
TE5 -> Class Type  : 0                  Priority           : 5
TE6 -> Class Type  : 0                  Priority           : 6
TE7 -> Class Type  : 0                  Priority           : 7
IgpThresholdUpdate : Disabled
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0
Update Timer       : N/A
Update on CAC Fail : Disabled
===============================================================================
* indicates that the corresponding row element may have been truncated.

===============================================================================
RSVP Status
===============================================================================
Admin Status       : Down               Oper Status        : Down
Keep Multiplier    : 3                  Refresh Time       : 30 sec
Message Pacing     : Disabled           Pacing Period      : 100 msec
Max Packet Burst   : 650 msgs           Refresh Bypass     : Disabled
Rapid Retransmit   : 5 hmsec            Rapid Retry Limit  : 3
Graceful Shutdown  : Disabled           SoftPreemptionTimer: 300 sec
GR Max Recovery    : 300 sec            GR Max Restart     : 120 sec
Implicit Null Label: Disabled           Node-id in RRO     : Exclude
P2P Merge Point Ab*: Disabled           P2MP Merge Point A*: Disabled
DiffServTE AdmModel: Basic
Percent Link Bw CT0: 100                Percent Link Bw CT4: 0
Percent Link Bw CT1: 0                  Percent Link Bw CT5: 0
Percent Link Bw CT2: 0                  Percent Link Bw CT6: 0
Percent Link Bw CT3: 0                  Percent Link Bw CT7: 0
TE0 -> Class Type  : 0                  Priority           : 0
TE1 -> Class Type  : 0                  Priority           : 1
TE2 -> Class Type  : 0                  Priority           : 2
TE3 -> Class Type  : 0                  Priority           : 3
TE4 -> Class Type  : 0                  Priority           : 4
TE5 -> Class Type  : 0                  Priority           : 5
TE6 -> Class Type  : 0                  Priority           : 6
TE7 -> Class Type  : 0                  Priority           : 7
IgpThresholdUpdate : Disabled
```

```
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0
Update Timer       : N/A
Update on CAC Fail : Disabled
===============================================================================
* indicates that the corresponding row element may have been truncated.

show router rsvp status
===============================================================================
RSVP Status
===============================================================================
Admin Status       : Down               Oper Status        : Down
Keep Multiplier    : 3                  Refresh Time       : 30 sec
Message Pacing     : Disabled           Pacing Period      : 100 msec
Max Packet Burst   : 650 msgs           Refresh Bypass     : Disabled
Rapid Retransmit   : 5 hmsec            Rapid Retry Limit  : 3
Graceful Shutdown  : Disabled           SoftPreemptionTimer: 300 sec
Implicit Null Label: Disabled           Node-id in RRO     : Exclude
P2P Merge Point Ab*: 10                 P2MP Merge Point A*: 10
DiffServTE AdmModel: Basic
Percent Link Bw CT0: 100                Percent Link Bw CT4: 0
Percent Link Bw CT1: 0                  Percent Link Bw CT5: 0
Percent Link Bw CT2: 0                  Percent Link Bw CT6: 0
Percent Link Bw CT3: 0                  Percent Link Bw CT7: 0
TE0 -> Class Type  : 0                  Priority           : 0
TE1 -> Class Type  : 0                  Priority           : 1
TE2 -> Class Type  : 0                  Priority           : 2
TE3 -> Class Type  : 0                  Priority           : 3
TE4 -> Class Type  : 0                  Priority           : 4
TE5 -> Class Type  : 0                  Priority           : 5
TE6 -> Class Type  : 0                  Priority           : 6
TE7 -> Class Type  : 0                  Priority           : 7
IgpThresholdUpdate : Disabled
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0
Update Timer       : N/A
Update on CAC Fail : Disabled
===============================================================================
* indicates that the corresponding row element may have been truncated.
*A:SRU4>show>router>rsvp# status
===============================================================================
RSVP Status
===============================================================================
Admin Status       : Up                 Oper Status        : Up
Keep Multiplier    : 3                  Refresh Time       : 30 sec
Message Pacing     : Disabled           Pacing Period      : 100 msec
Max Packet Burst   : 650 msgs           Refresh Bypass     : Disabled
Rapid Retransmit   : 100 hmsec          Rapid Retry Limit  : 3
Graceful Shutdown  : Disabled           SoftPreemptionTimer: 300 sec
Implicit Null Label: Disabled
DiffServTE AdmModel: Basic
Percent Link Bw CT0: 100                Percent Link Bw CT4: 0
Percent Link Bw CT1: 0                  Percent Link Bw CT5: 0
Percent Link Bw CT2: 0                  Percent Link Bw CT6: 0
Percent Link Bw CT3: 0                  Percent Link Bw CT7: 0
TE0 -> Class Type  : 0                  Priority           : 0
TE1 -> Class Type  : 0                  Priority           : 1
TE2 -> Class Type  : 0                  Priority           : 2
TE3 -> Class Type  : 0                  Priority           : 3
TE4 -> Class Type  : 0                  Priority           : 4
TE5 -> Class Type  : 0                  Priority           : 5
```

```
TE6 -> Class Type  : 0                  Priority           : 6
TE7 -> Class Type  : 0                  Priority           : 7
IgpThresholdUpdate : Disabled
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0
Update Timer       : N/A
Update on CAC Fail : Disabled
===============================================================================
*A:SRU4>show>router>rsvp#
```

lsp-bfd

Syntax **lsp-bfd**
lsp-bfd local-bfd-discrim *bfd-discriminator*
lsp-bfd lsp-name *lsp-name*

Context show>test-oam

Description This command displays information about Bidirectional Forwarding Detection (BFD) sessions on LSPs.

Parameters **local-bfd-discrim** *bfd-discriminator* **—** Displays information about the unique local discriminator for this session.

lsp-name *lsp-name* **—** Specifies infomrmation about the specified LSP name.

Sample Output

```
A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-------------------------------------------------------------------------------
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-------------------------------------------------------------------------------
LSP Name : Z
LSP Path Status         : unknown
Replying Node           : (None)
Latest Return Code      : NoRtnCode (0)
Latest Return Subcode   : 3
Local BFD Discriminator : 1            Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests    : 2123456789   Rx LSP Ping Requests     : 3123456789
-------------------------------------------------------------------------------
A:bkvm1#
A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1

-------------------------------------------------------------------------------
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-------------------------------------------------------------------------------
LSP Name : Z
LSP Path Status         : active
Replying Node           : 240.241.242.243
Latest Return Code      : DSRtrMatchLabel (8)
Latest Return Subcode   : 4
Local BFD Discriminator : 1            Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests    : 2123456789   Rx LSP Ping Requests     : 3123456789
-------------------------------------------------------------------------------
A:bkvm1#
```

```
A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-------------------------------------------------------------------------------
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-------------------------------------------------------------------------------
LSP Name : Z
LSP Path Status         : inactive
Replying Node           : f0f1:f2f3:f4f5:f6f7:f8f9:fafb:fcfd:feff
Latest Return Code      : DSRtrUnmatchLabel (10)
Latest Return Subcode   : 5
Local BFD Discriminator : 1            Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests    : 2123456789   Rx LSP Ping Requests     : 3123456789
-------------------------------------------------------------------------------
A:bkvm1#


A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-------------------------------------------------------------------------------
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-------------------------------------------------------------------------------
LSP Name : Z
LSP Path Status         : unknown
Replying Node           : (None)
Latest Return Code      : DSNoMac (16)
Latest Return Subcode   : 6
Local BFD Discriminator : 1            Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests    : 2123456789   Rx LSP Ping Requests     : 3123456789
-------------------------------------------------------------------------------
A:bkvm1#
```

Tools Commands

bypass-tunnel

Syntax **bypass-tunnel** [*lsp-name*] **plr**

Context tools>dump>router>mpls

Description This command displays information about the MPLS bypass tunnel.

lspinfo

Syntax **lspinfo**

Context tools>dump>router>mpls

Description This command dumps LSP information for MPLS.

ftn

Syntax **ftn**

Context tools>dump>router>mpls

Description This command dumps FTN information for MPLS.

ilm

Syntax **ilm**

Context tools>dump>router>mpls

Description This command dumps ILM information for MPLS.

memory-usage

Syntax **memory-usage**

Context tools>dump>router>mpls

Description This command dumps memory usage information for MPLS.

adjust-autobandwidth

Syntax **adjust-autobandwidth** [**lsp** *lsp-name* [**force** [**bandwidth** *mbps*]]]

Context tools>perform>router>mpls

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

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

Default none

Parameters *lsp-name* — The name of the LSP to which this command applies. If this parameter is not supplied the command applies to all active LSPs.

Values String (32 chars max)

Default none

mbps — The bandwidth that the LSP should be immediately resized to.

Values 0—100000

Default none

cspf

Syntax **cspf to** *ip-address*

Context tools>perform>router>mpls

Description This command computes a CSPF path given user constraints.

Sample Output

```
*A:Dut-C# /tools perform router mpls cspf to 10.20.1.6
Req CSPF for all ECMP paths
    from: this node to: 10.20.1.6 w/(no Diffserv) class: 0 , setup Priority 7, Hold
Priority 0 TE Class: 7

CSPF Path
To        : 10.20.1.6
Path 1    : (cost 2000)
```

```
    Src:   10.20.1.3   (= Rtr)
   Egr:   unnumbered lnkId 4             -> Ingr:   unnumbered lnkId 2
Rtr:   10.20.1.5          (met 1000)
   Egr:   unnumbered lnkId 3             -> Ingr:   unnumbered lnkId 3
Rtr:   10.20.1.6          (met 1000)
    Dst:   10.20.1.6   (= Rtr)

Path 2    : (cost 2000)
    Src:   10.20.1.3   (= Rtr)
   Egr:   unnumbered lnkId 5             -> Ingr:   unnumbered lnkId 5
Rtr:   10.20.1.4          (met 1000)
   Egr:   unnumbered lnkId 3             -> Ingr:   unnumbered lnkId 2
Rtr:   10.20.1.6          (met 1000)
    Dst:   10.20.1.6   (= Rtr)

*A:Dut-C#
```

force-switch-path

Syntax **force-switch-path** [**lsp** *lsp-name*] [**path** *path-name*]

Context tools>perform>router>mpls

Description Use this command to move from a standby path to any other standby path regardless of priority.

The **no** form of the command reverts to priority path.

Parameters *lsp-name* — Specifies an existing LSP name to move.

path-name — Specifies the path name to which to move the specified LSP.

plr

Syntax **plr**

Context tools>dump>router>mpls>bypass-tunnel

Description Dump the Point of Local Repair (LPR) information for the MPLS bypass tunnel.

Sample Output

```
tools dump router mpls bypass-tunnel plr
===============================================================================
MPLS Bypass Tunnels
===============================================================================
Legend :  m - Manual      d - Dynamic      p - P2mp
===============================================================================
To              State  Out I/F        Out Label     Reserved   Protected  Type
                                                     BW (Kbps)  LSP Count
-------------------------------------------------------------------------------
10.10.12.1      Up     1/1/4          124181        0          369        d
```

```
To              : 10.10.12.1         State               : Up
Out I/F         : 1/1/4              Out Label           : 124181
Up Time         : 0d 19:24:13        Active Time         : n/a
Reserved BW     : 0 Kbps             Protected LSP Count : 369
Type            : Dynamic
SetupPriority   : 7                  Hold Priority       : 0
Class Type      : 0                  Tunnel Id : 63697
Actual Hops     :
    10.10.12.2(S)      -> 10.10.12.1(S)

         Plr List: (Last PlrIdx 2)
         --------
                 PLR List Index = 1
                 PLR current State = PLRS_CONNECTED
                 NextNodeSysId = 8.8.8.8
                  AvoidNodeId   = 2.2.2.2
                 NodeProtect   = 2 (Node Protect)
                 LSP Count     = 197
                 PLR List Index = 2
                 PLR current State = PLRS_BackupInUse
                 NextNodeSysId = 8.8.8.8
                 AvoidNodeId   = 2.2.2.2
                 NodeProtect   = 2 (Node Protect)
                 LSP Count     = 203
```

cspf

Syntax **cspf to** *ip-addr* [**from** *ip-addr*] [**bandwidth** *bandwidth*] [**include-bitmap** *bitmap*] [**exclude-bitmap** *bitmap*] [**hop-limit** *limit*] [**exclude-address** *excl-addr* [*excl-addr...*(up to 8 max)]] [**use-te-metric**] [**strict-srlg**] [**srlg-group** *grp-id...*(up to 8 max)] [**exclude-node** *excl-node-id* [*excl-node-id..*(up to 8 max)]] [**skip-interface** *interface-name*] [**ds-class-type** *class-type*] [**cspf-reqtype** *req-type*] [**least-fill-min-thd** *thd*] [**setup-priority** *val*] [**hold-priority** *val*]

Context tools>perform>router>mpls

Description This command computes a CSPF path with specified user constraints.

Default none

Parameters **to** *ip-addr* — Specify the destination IP address.

from *ip-addr* — Specify the originating IP address.

bandwidth *bandwidth* — Specifies the amount of bandwidth in mega-bits per second (Mbps) to be reserved.

include-bitmap *bitmap* — Specifies to include a bit-map that specifies a list of admin groups that should be included during setup.

exclude-bitmap *bitmap* — Specifies to exclude a bit-map that specifies a list of admin groups that should be included during setup.

hop-limit *limit* — Specifies the total number of hops a detour LSP can take before merging back onto the main LSP path.

exclude-address *ip-addr* — Specifies IP addresses, up to 8, that should be included during setup.

use-te-metric — Specifies the use of the traffic engineering metric used on the interface.

strict-srlg — Specifies whether to associate the LSP with a bypass or signal a detour if a bypass or detour satisfies all other constraints except the SRLG constraints.

srlg-group *grp-id* **—** Specifies up to 8 Shared Risk Loss Groups (SRLGs). An SRLG group represents a set of interfaces which could be subject to the same failures or defects and thus share the same risk of failing.

Values 0 — 4294967295

exclude-node *excl-node-id* **—** specifies a list of address that should be excluded when this LSP is setup.

skip-interface *interface-name* **—** Specifies an interface name that should be skipped during setup.

ds-class-type *class-type* **—** Specifies the class type (CT) associated with this LSP.

Values 0 — 7

cspf-reqtype *req-type* **—** Specifies the req. type.

Values all, random, least-fill

least-fill-min-thd *thd* **—** Specifies whether the use of the least-fill path selection method for the computation of the path of this LSP is enabled.

Values 1 — 100

setup-priority *val* **—** Specifies the setup priority to use when insufficient bandwidth is available to setup an LSP.

Values 0 — 7

hold-priority *val* **—** Specifies the hold priority value to use when insufficient bandwidth is available to setup an LSP.

Values 0 — 7

resignal

Syntax **resignal** {**lsp** *lsp-name* **path** *path-name* | **delay** *minutes*}
resignal {**p2mp-lsp** *p2mp-lsp-name* **p2mp-instance** *p2mp-instance-name* | **p2mp-delay** *p2mp-minutes*}

Context tools>perform>router>mpls

Description This command resignals a specific LSP path. The *minutes* parameter configures the global timer or all LSPs for resignal. If only lsp-name and path-name are provided, the LSP will be resignaled immediately.

Parameters *lsp-name* — Specifies an existing LSP name to resignal.

path-name — Specifies an existing path name to resignal.

delay *minutes* **—** Configures the global timer or all LSPs to resignal.

p2mp-lsp *p2mp-lsp-name* **—** Specifies an existing point-to-multipoint LSP name.

p2mp-instance *p2mp-instance-name* **—** Specifies a name that identifies the P2MP LSP instance

p2mp-delay *p2mp-minutes* — Specifies the delay time, in minutes.

Values 0 — 60

resignal-bypass

Syntax **resignal-bypass** {**lsp** *bypass-lsp-name* [**force**] | **delay** *minutes*}

Context tools>perform>router>mpls

Description This command performs a manual re-optimization of a specific dynamic or manual bypass LSP, or of all dynamic bypass LSPs.

The name of a manual bypass LSP is the one provided by the user at configuration time. The name of a dynamic bypass LSP is shown in the output of "**show>router>mpls>bypass-tunnel dynamic detail**".

The **delay** option triggers the global re-optimization of all dynamic bypass LSPs at the expiry of the specified delay. In essence, this option forces the global bypass resignal timer to expire after an amount of time equal to the value of the **delay** parameter. This option has no affect on a manual bypass LSP.

However, when a specific bypass LSP name is specified, the named dynamic or manual bypass LSP is not signaled and the associations are not evaluated even if the new bypass LSP path has the same cost as the current one. This is a different behavior from that of the similar command for the primary or secondary path of an LSP as a bypass LSP can have a large number of PSB associations.

In the specific case where the name corresponds to a manual bypass LSP, the LSP is torn down and re-signaled using the new path provided by CSPF if no PSB associations exist. If there is one or more PSB association but no PLR is active, the command is failed and the user is asked to explicitly enter the **force** option. In this case, the manual bypass LSP is torn down and re-signaled, leaving temporarily the associated LSP primary paths unprotected. Finally, if one or more PLRs associated with the manual bypass LSP is active, the command is failed.

Parameters **lsp** *bypass-lsp-name* [**force**] — Specifies the name of the dynamic or manual bypass LSP. The force option is required when the name corresponds to a manual bypass LSP and the LSP has PSB associations.

delay *minutes* — Specifies the time, in minutes, MPLS waits before attempting to re-signal dynamic bypass LSP paths originated on the system.

Values 0 — 30

revert

Syntax **revert** [**lsp** *lsp-name*]

Context tools>perform>router>mpls

Description Use this command to cause a named LSP, which is currently using a secondary path and for which the revert-timer has been configured, to switch back to using the primary path. Any outstanding revert-timer is canceled.

The primary path must be up for this command to be successful.

Parameters *lsp-name* — Specifies an existing LSP name to move.

switch-path

switch-path [**lsp** *lsp-name*] [**path** *path-name*]

Context tools>perform>router>mpls

Use this command to move from a standby (or an active secondary) to another standby of the same priority. If a new standby path with a higher priority or a primary path comes up after the **tools perform** command is executed, the path re-evaluation command runs and the path is moved to the path specified by the outcome of the re-evaluation.

Parameters *lsp-name* — Specifies an existing LSP name to move.

path-name — Specifies the path name to which to move the specified LSP.

te-lspinfo

Syntax **te-lspinfo** [**endpoint** *ip-address*] [**sender** *ip-address*] [**lspid** *lsp-id*] [**detail**] [**p2p** | ***p2p-tid*** *tunnel-id*]
te-lspinfo [**endpoint** *ip-address*] [**sender** *ip-address*] [**lspid** *lsp-id*] [**detail**] [**p2p** | **p2p-tid** *tunnel-id*]{ [**phops**] [**nhops**] [**s2l** *ip-address*] } }

Context tools>dump>router>mpls

Description This command displays TE LSP information for MPLS.

Default none

Sample Output

```
B:Dut-R# tools dump router mpls te-lspinfo
Key P2P: Session(10.10.3.2, 201, 3.3.3.3) Sender(3.3.3.3, 2) PHOP(10.10.3.1), Flags
0x0

Key P2P: Session(10.10.3.1, 1035, 4.4.4.4) Sender(4.4.4.4, 22) PHOP(10.10.11.2),
Flags 0x0

Key P2MP: Session(0.0.0.0, 1, 4.4.4.4) Sender(4.4.4.4, 52226) PHOP(0.0.0.0) Flags
0x10
  S2L [1] Key: endPoint to 2.2.2.2 subGroupId - 1 subGroupOrigId - 4.4.4.4
  S2L [2] Key: endPoint to 10.10.2.2 subGroupId - 3 subGroupOrigId - 4.4.4.4
  S2L [3] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 4.4.4.4

Key P2MP: Session(0.0.0.0, 2, 4.4.4.4) Sender(4.4.4.4, 51714) PHOP(0.0.0.0) Flags
0x10
  S2L [1] Key: endPoint to 2.2.2.2 subGroupId - 1 subGroupOrigId - 4.4.4.4
  S2L [2] Key: endPoint to 10.10.2.2 subGroupId - 3 subGroupOrigId - 4.4.4.4
  S2L [3] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 4.4.4.4
```

```
Key P2MP: Session(0.0.0.0, 3, 4.4.4.4) Sender(4.4.4.4, 53250) PHOP(0.0.0.0) Flags
0x10

*A:Dut-T# tools dump router mpls te-lspinfo p2mp-tid 102 nhops

  Key P2MP: Session(0.0.0.0, 102, 4.4.4.4) Sender(4.4.4.4, 3074) PHOP(0.0.0.0) Flags
0x10
  -------------------------------------------------------------------------------
        List of NEXT HOPS
  -------------------------------------------------------------------------------

  NextHop [1] =>
  Key: Nhop - isFrr 0, outIf 0, NextHop 0.0.0.0 label - 128843  global Instance 0 is
Leaf node
        ---------------------------------------------------------------------
        Primary NHLFE => outLabel - 0 and NextHop - 0.0.0.0, outIf 0 (0)
                Port(NONE) NhIdx 0, ProtNhIdx 0, NumS2L 1
                ProtectInstance - 0, ProtectGroup 0
        POP
        No Backup NHLFEs for this Ltn entry
  Mid List :    3428 numS2Ls - 1 (Primary MID),

  NextHop [2] =>
  Key: Nhop - isFrr 0, outIf 3, NextHop 10.10.13.2 label - 128806  global Instance -
48747
        ---------------------------------------------------------------------
        Primary NHLFE => outLabel - 128806 and NextHop - 10.10.13.2, outIf 3 (126)
                Port(9/1/1) NhIdx 4322, ProtNhIdx 2275, NumS2L 1
                ProtectInstance - 1, ProtectGroup 126
        SWAP
        Backup NHLFE => outLabel - 130223 and NextHop - 10.10.3.2, outIf 5 (124)
                Port(9/2/3) outPushLabel 128806, NhIdx 5469, ProtNhIdx 0, NumS2L 1
  Mid List :    3428 numS2Ls - 1 (Primary MID),

  NextHop [3] =>
  Key: Nhop - isFrr 0, outIf 4, NextHop 10.10.2.2 label - 128836  global Instance -
48974
        ---------------------------------------------------------------------
        Primary NHLFE => outLabel - 128836 and NextHop - 10.10.2.2, outIf 4 (125)
                Port(lag-1) NhIdx 4292, ProtNhIdx 2245, NumS2L 2
                ProtectInstance - 1, ProtectGroup 125
        SWAP
        Backup NHLFE => outLabel - 130223 and NextHop - 10.10.3.2, outIf 5 (124)
                Port(9/2/3) outPushLabel 128836, NhIdx 5659, ProtNhIdx 0, NumS2L 2
  Mid List :    3428 numS2Ls - 1 (Primary MID),   3471 numS2Ls - 1 (Backup MID),

  S2L [1] Key: endPoint to 2.2.2.2 subGroupId - 1 subGroupOrigId - 4.4.4.4
  S2L [2] Key: endPoint to 3.3.3.3 subGroupId - 2 subGroupOrigId - 4.4.4.4
  S2L [3] Key: endPoint to 10.10.2.2 subGroupId - 3 subGroupOrigId - 4.4.4.4
  S2L [4] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 4.4.4.4

  Total TeLspInfo Count   : 1
```

psb

Syntax **psb**

Context tools>dump>router>rsvp

Sample Output

```
*A:Dut-A>config>router>mpls>lsp$ /tools dump router rsvp psb detail
------------------------------------------------------------------------
PSB:
 P2P: Session (To: 10.20.1.4 - 61441 - 10.20.1.1), Sender (10.20.1.1 - 2) PHop
255.255.255.255

PSB CurrState: BACKUPS_CONNECTED  PrevState: BACKUPS_INIT  Flags: 0x0
LocalLabel 0 OutLabel 131070
Incoming IfIndex: Interface: Local API(-1)
Refresh interval 0, Send Path refresh in 3 secs,  Path Refresh timeout 0 secs
PrevHop: Ctype 1  Addr 255.255.255.255, LIH 0
DnStream Nbr: Addr-> 10.20.1.3  IfIndex ip-10.10.2.1(3)
UpStream Neighbor is NULLP
Session Attribute:
   Session Name: bypass-node10.20.1.2
   HoldPri: 0 SetupPri: 7 Flags: 0x2
   Ctype: 7, IncludeGroup: 0x0 IncludeAllGroup: 0x0 ExcludeGroup: 0x0
ClassType: Absent
TSpec: Flags 0x8000 QOSC 0, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps) MTU: 0
CSPF Hop List: ->
  (1) UnnumIfId 3 RtrId 10.20.1.1 EgrAdmGrp 0x0 (Strict)
  (2) UnnumIfId 2 RtrId 10.20.1.3 EgrAdmGrp 0x0 (Strict)
  (3) UnnumIfId 5 RtrId 10.20.1.4 EgrAdmGrp 0x0 (Strict)
PSB RRO : ->
  (1) * Flags : 0x0 :      U
  (1) * UnInf : 10.20.1.1, 3
PSB SENT RRO : ->
  (1) * Flags : 0x0 :      U
  (1) * UnInf : 10.20.1.1, 3
PSB FILTERSPEC RRO : ->
  (1) * Flags : 0x0 :      U
  (1) * UnInf : 10.20.1.3, 2
  (2) * Flags : 0x1 :     Global
  (2) * Label : 131070
  (3) * Flags : 0x0 :      U
  (3) * UnInf : 10.20.1.4, 5
  (4) * Flags : 0x1 :     Global
  (4) * Label : 131070
PSB ERO : ->
  (1) Unnumbered RouterId 10.20.1.1, LinkId 3, Strict
  (2) Unnumbered RouterId 10.20.1.3, LinkId 2, Strict
  (3) Unnumbered RouterId 10.20.1.4, LinkId 5, Strict
PSB SENT ERO : ->
  (1) Unnumbered RouterId 10.20.1.3, LinkId 2, Strict
  (2) Unnumbered RouterId 10.20.1.4, LinkId 5, Strict
SendTempl: Sender:10.20.1.1_2
AdSpec Present - Flags: 0x0
  AdSpec General
  - Service Break bit           : 0x0
  - IS Hop Count                : 0x0
  - Path Bandwidth Estimate     : 0x0
```

```
  - Minimum Path latency        : 0x0
  - Composed path MTU           : 0

Num Paths Received   :0
Num Paths Transmitted:5
Num Resvs Received   :8
Num Resvs Transmitted:0

Num Summmary Paths Received   :0
Num Summmary Paths Transmitted:0
Num Summmary Resvs Received   :0
Num Summmary Resvs Transmitted:0
Created at 91359 (26 secs back)
-------------------------------------------------------------------------
-------------------------------------------------------------------------
PSB:
 P2P: Session (To: 10.20.1.6 - 1 - 10.20.1.1), Sender (10.20.1.1 - 30208) PHop
0.0.0.0

PSB CurrState: PRIMARYS_CONNECTED  PrevState: PRIMARYS_INIT  Flags: 0x8
LocalLabel 0 OutLabel 131071
Incoming IfIndex: Interface: Local API(-1)
Refresh interval 5, Send Path refresh in 4 secs,  Path Refresh timeout 0 secs
PrevHop: Ctype 1  Addr 0.0.0.0, LIH 0
DnStream Nbr: Addr-> 10.20.1.2  IfIndex ip-10.10.1.1(2)
UpStream Neighbor is NULLP
Session Attribute:
   Session Name: 1::1
   HoldPri: 0 SetupPri: 7 Flags: 0x17
   Ctype: 7, IncludeGroup: 0x0 IncludeAllGroup: 0x0 ExcludeGroup: 0x0
ClassType: Absent
TSpec: Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps) MTU: 0
CSPF Hop List: ->
  (1) UnnumIfId 2 RtrId 10.20.1.1 EgrAdmGrp 0x0 (Strict)
  (2) UnnumIfId 2 RtrId 10.20.1.2 EgrAdmGrp 0x0 (Strict)
  (3) UnnumIfId 2 RtrId 10.20.1.4 EgrAdmGrp 0x0 (Strict)
  (4) UnnumIfId 2 RtrId 10.20.1.6 EgrAdmGrp 0x0 (Strict)
PSB RRO : ->
  (1) * Flags : 0x9 :      U LP_AVAIL NODE
  (1) * UnInf : 10.20.1.1, 2
PSB SENT RRO : ->
  (1) * Flags : 0x0 :      U
  (1) * UnInf : 10.20.1.1, 2
PSB FILTERSPEC RRO : ->
  (1) * Flags : 0x9 :      U LP_AVAIL NODE
  (1) * UnInf : 10.20.1.2, 2
  (2) * Flags : 0x1 :     Global
  (2) * Label : 131071
  (3) * Flags : 0x1 :      U LP_AVAIL
  (3) * UnInf : 10.20.1.4, 2
  (4) * Flags : 0x1 :     Global
  (4) * Label : 131071
  (5) * Flags : 0x0 :      U
  (5) * UnInf : 10.20.1.6, 2
  (6) * Flags : 0x1 :     Global
  (6) * Label : 131071
PSB ERO : ->
  (1) Unnumbered RouterId 10.20.1.2, LinkId 2, Strict
  (2) Unnumbered RouterId 10.20.1.4, LinkId 2, Strict
  (3) Unnumbered RouterId 10.20.1.6, LinkId 2, Strict
PSB SENT ERO : ->
```

```
  (1) Unnumbered RouterId 10.20.1.2, LinkId 2, Strict
  (2) Unnumbered RouterId 10.20.1.4, LinkId 2, Strict
  (3) Unnumbered RouterId 10.20.1.6, LinkId 2, Strict
SendTempl: Sender:10.20.1.1_30208
AdSpec not present
FRR: Flags 0x2 HopLimit 16 SetupPri 7 HoldPri 0 IncludeAny 0x0 ExcludeAny 0x0
IncludeAll 0x0
PLR: Flag (0x166) State PLRS_BYPASS_UP AvoidNodeId 10.20.1.2 inIntf -1 inLabel 0
PLR: FRRRequestCount: 1  CSPFFailures: 0  ProtectionType: NodeProtect

Num Paths Received   :0
Num Paths Transmitted:5
Num Resvs Received   :5
 Num Resvs Transmitted:0

Num Summmary Paths Received   :0
Num Summmary Paths Transmitted:0
Num Summmary Resvs Received   :0
Num Summmary Resvs Transmitted:0
Created at 91359 (28 secs back)
-------------------------------------------------------------------------------
  Total PSB Count   : 2
```

rsb

Syntax **rsb**

Context tools>dump>router>rsvp

Sample Output

```
4)   *A:Dut-A>config>router>mpls>lsp$ /tools dump router rsvp rsb detail
-------------------------------------------------------------------------------
RSB:
 EndPt 10.20.1.4  Tid 61441  XTid 10.20.1.1  Sndr 10.20.1.1  LspId 2  ifIndex 3 NHop
20.20.1.3
Style FF, refresh in 0 secs
RSVP NextHop 20.20.1.3, LIH 3 (TLV: RtrId 10.20.1.3 IntfId 2)
CT Shared Reservation Info:
No Reservation:
FlowSpec :Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps)
          CBS 0, EBS 0, RSpecR 0, RSpecS 0 MTU 1500 MPU 20
FwdFlowspec :Flags 0x0 QOSC 0, PDR (0.000 bps), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MPU 0
FilterSpec:
Timeout in : 26 secs, LocLabel: 0  Sender: 10.20.1.1 lspId: 2 OutIfId: 0
RRO :
  (1) * Flags : 0x0 :      U
  (1) * UnInf : 10.20.1.3, 2
  (2) * Flags : 0x1 :     Global
  (2) * Label : 131070
  (3) * Flags : 0x0 :      U
  (3) * UnInf : 10.20.1.4, 5
  (4) * Flags : 0x1 :     Global
  (4) * Label : 131070
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
```

```
RSB:
 EndPt 10.20.1.6  Tid 1  XTid 10.20.1.1  Sndr 0.0.0.0  LspId 0  ifIndex 2 NHop
20.20.1.2
Style SE, refresh in 0 secs
RSVP NextHop 20.20.1.2, LIH 2 (TLV: RtrId 10.20.1.2 IntfId 2)
CT Shared Reservation Info:
No Reservation:
FlowSpec :Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps)
          CBS 0, EBS 0, RSpecR 0, RSpecS 0 MTU 1496 MPU 20
FwdFlowspec :Flags 0x0 QOSC 0, PDR (0.000 bps), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MPU 0
FilterSpec:
Timeout in : 21 secs, LocLabel: 0  Sender: 10.20.1.1 lspId: 30208 OutIfId: 0
RRO :
  (1) * Flags : 0x9 :      U LP_AVAIL NODE
  (1) * UnInf : 10.20.1.2, 2
  (2) * Flags : 0x1 :     Global
  (2) * Label : 131071
  (3) * Flags : 0x1 :      U LP_AVAIL
  (3) * UnInf : 10.20.1.4, 2
  (4) * Flags : 0x1 :     Global
  (4) * Label : 131071
  (5) * Flags : 0x0 :      U
  (5) * UnInf : 10.20.1.6, 2
  (6) * Flags : 0x1 :     Global
  (6) * Label : 131071
-------------------------------------------------------------------------------
  Total RSB Count   : 2
```

trap-suppress

Syntax **trap-suppress** *number-of-traps time-interval*

Context tools>perform>router>mpls

Description This command modifies thresholds for trap suppression. The *time-interval* parameter is used to suppress traps after a certain number of traps have been raised within a period. By executing this command, there will be no more than *number-of-traps* within *time-interval*.

Parameters *number-of-traps* — Specifies to suppress the number of traps raised within a period.

Values 100 — 1000, in multiples of 100

time-interval — Specifies to suppress a certain number of traps raised within a period.

Values 1 — 300

tunnel-interface

Syntax [**no**] **tunnel-interface rsvp-p2mp** *lsp-name* [**sender** *sender-address*]

Context config>router
config>router>igmp

Description This command creates a tunnel interface associated with an RSVP P2MP LSP. IPv4 multicast packets are forwarded over the P2MP LSP at the ingress LER based on a static join configuration of the multicast group against the tunnel interface associated with the originating P2MP LSP. At the egress LER, packets of a multicast group are received from the P2MP LSP via a static assignment of the specific <S,G> to the tunnel interface associated with a terminating LSP.

At ingress LER, the tunnel interface identifier consists of a string of characters representing the LSP name for the RSVP P2MP LSP. The user can create one or more tunnel interfaces and associate each to a different RSVP P2MP LSP.

At egress LER, the tunnel interface identifier consists of a couple of string of characters representing the LSP name for the RSVP P2MP LSP followed by the system address of the ingress LER. The LSP name must correspond to a P2MP LSP name configured by the user at the ingress LER. The LSP name string must not contain "::" (two :s) nor contain a ":" (single ":") at the end of the LSP name. However, a ":" (single ":") can appear anywhere in the string except at the end of the name.

Default none

Parameters **rsvp-p2mp** *lsp-name* — Specifies the LSP. The LSP name can be up to 32 characters long and must be unique.

sender *sender-address* — Specifies system address of the ingress LER for the P2MP RSVP LSP.

update-path

Syntax **update-path** {**lsp** *lsp-name* **path** *current-path-name* **new-path** *new-path-name*}

Context tools>perform>router>mpls

Description This command enables you to instruct MPLS to replace the path of a primary or secondary LSP. The primary or secondary LSP path is indirectly identified via the *current-path-name* value. The same path name cannot be used more than once in a given LSP name.

This command applies to both CSPF LSP and to a non-CSPF LSP. This command will only work when the specified *current-path-name* has the adaptive option enabled. The adaptive option can be enabled at the LSP level or the path level.

The new path must have been configured in the CLI or provided via SNMP. The CLI command for entering the path is

configure router mpls path *path-name*

The command fails if any of the following conditions exist:

- The specified *current-path-name* of this LSP does not have the adaptive option enabled.
- The specified *new-path-name* value does not correspond to a previously defined path.
- The specified *new-path-name* value exists but is being used by any path of the same LSP, including this one.

When you execute this command, MPLS performs the following procedures:

- MPLS performs a single MBB attempt to move the LSP path to the new path.
- If the MBB is successful, MPLS updates the new path

  - MPLS writes the corresponding NHLFE in the data path if this path is the current backup path for the primary.
  - If the current path is the active LSP path, it will update the path, write the new NHLFE in the data path that will cause traffic to switch to the new path.
- If the MBB is not successful, the path retains it current value.
- The update-path MBB has the same priority as the manual re-signal MBB.

Clear Commands

session

Syntax **session src-ip** *ip-address* **dst-ip** *ip-address*
session src-ip ip-*address* **dst-ip** *ip-address* **lsp-rsvp** {**head**|**tail**} **tunnel-id** [0..4294967295] **lsp-id** [0..4294967295]
session mpls-tp *lsp-name* **path** {**working**|**protect**}
session p2mp-interface *interface-name*
session src-ip *ip-address* **lsp-rsvp** {**head**|**tail**} **rsvp-session-name** [256 chars max]

Context clear>router>bfd

Description This command clears BFD session information. Clearing the BFD session will cause it to go down and restart. This may cause any client protocols whose state is affected by BFD to go down.

As in the current implementation if **clear router** *router-instance* **bfd statistics** all is executed, then the router-instance is ignored and the clear is applied to all session statistics.

Parameters **src-ip** *ip-address* — Clears information about the specified source IP address.

dst-ip *ip-address* — Clears information about the specified destination IP address.

lsp-rsvp {**head**|**tail**} — Clears information about the specified link type.

tunnel-id [0..4294967295] — Clears information about the specified tunnel ID.

lsp-id [0..4294967295] — Clears information about the specified LSP ID.

mpls-tp *lsp-name* — Clears information about the specified MPLS TP LSP.

path {**working**|**protect**} — Clears information about the working or protect path.

p2mp-interface *interface-name* — Clears information about the specified P2MP interface.

rsvp-session-name [256 chars max] — Clears information about the specified RSVP session.

statistics

Syntax **statistics src-ip** *ip-address* **dst-ip** *a.b.c.d*
statistics all
statistics src-ip *ip-address* **dst-ip** *a.b.c.d* **lsp-rsvp** {**head**|**tail**} **tunnel-id** [0..4294967295] **lsp-id** [0..4294967295]
statistics mpls-tp *lsp-name* **path** {**working**|**protect**}
statistics p2mp-interface *interface-name*
statistics src-ip *ip-address* **lsp-rsvp** {**head**|**tail**} **rsvp-session-name** [256 chars max]

Description This command clears BFD statistics.

Parameters **src-ip** *ip-address* — Clears statistics about the specified source IP address.

dst-ip *ip-address* — Clears statistics about the specified destination IP address.

all — Clears all statistics for the BFD instance.

lsp-rsvp {**head**|**tail**} **—** Clears statistics about the specified link type.

tunnel-id [0..4294967295] **—** Clears statistics about the specified tunnel ID.

lsp-id [0..4294967295] **—** Clears statistics about the specified LSP ID.

mpls-tp *lsp-name* **—** Clears statistics about the specified MPLS TP LSP.

path {**working**|**protect**} **—** Clears statistics about the working or protect path.

p2mp-interface *interface-name* **—** Clears statistics about the specified P2MP interface.

rsvp-session-name [256 chars max] **—** Clears statistics about the specified RSVP session.

interface

Syntax **interface** *ip-int-name* [**statistics**]

Context clear>router>mpls

Description This command resets or clears statistics for MPLS interfaces.

Parameters *ip-int-name* — The name of an existing IP interface. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

statistics — This parameter clears only statistics.

lsp

Syntax **lsp** *lsp-name*

Context clear>router>mpls

Description This command resets and restarts an LSP.

Parameters *lsp-name* — The name of the LSP to clear up to 64 characters in length.

lsp-autobandwidth

Syntax **lsp-autobandwidth** [*lsp-name*]

Context clear>router>mpls>lsp

Description This command clears the following counters/timers, as follows:

- The sample count is reset to zero, and the average data rate of the current sample interval is discarded.
- The adjust count is reset to zero.
- The maximum average data rate is zeroed.
- The overflow count is zeroed.

ingress-stats

Syntax **ingress-statistics**

Context clear>router>mpls

Description This command provides the context for the user to enter the LSP names for the purpose of enabling ingress data path statistics at the terminating node of the LSP (for example, egress LER).

Default none

lsp-egress-stats

Syntax **lsp-egress-stats**
lsp-egress-stats *lsp-name*

Context clear>router>mpls

Description This command clears MPLS LSP egress statistics information.

lsp-ingress-stats

Syntax **lsp-ingress-stats**
lsp-ingress-stats *ip-address* **lsp** *lsp-name*
lsp-ingress-stats *sender-address*:*lsp-name*

Context clear>router>mpls

Description This command clears MPLS LSP ingress statistics information.

interface

Syntax **interface** *ip-int-name* **statistics**

Context clear>router>rsvp

Description This command resets or clears statistics for an RSVP interface.

Parameters *ip-int-name* — The name of the IP interface to clear. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

statistics — This parameter clears only statistics.

statistics

Syntax **statistics**

Context clear>router>rsvp

Description This command clears global statistics for the RSVP instance, for example, clears **path** and **resv time-out** counters.

Debug Commands

mpls

Syntax **mpls** [**lsp** *lsp-name*] [**sender** *source-address*] [**endpoint** *endpoint-address*] [**tunnel-id** *tunnel-id*] [**lsp-id** *lsp-id*] [**interface** *ip-int-name*]
no mpls

Context debug>router

Description This command enables and configures debugging for MPLS.

Parameters **lsp** *lsp-name* — Name that identifies the LSP. The LSP name can be up to 32 characters long and must be unique.

sender *source-address* — The system IP address of the sender.

endpoint *endpoint-address* — The far-end system IP address.

tunnel-id *tunnel-id* — The MPLS SDP ID.

Values 0 — 4294967295

lsp-id *lsp-id* — The LSP ID.

Values 1 — 65535

interface *ip-int-name* — Name that identifies the interface. The interface name can be up to 32 characters long and must be unique. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

event

Syntax [**no**] **event**

Context debug>router>mpls
debug>router>rsvp

Description This command enables debugging for specific events.

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

all

Syntax **all** [**detail**]
no all

Context debug>router>mpls>event
debug>router>rsvp>event

Description This command debugs all events.

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

Parameters **detail —** Displays detailed information about all events.

frr

Syntax **frr** [**detail**]
no frr

Context debug>router>mpls>event

Description This command debugs fast re-route events.

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

Parameters **detail —** Displays detailed information about re-route events.

iom

Syntax **iom** [**detail**]
no iom

Context debug>router>mpls>event

Description This command reports MPLS debug events originating from the XMA.

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

Parameters **detail —** Displays detailed information about MPLS events originating from the XMA.

lsp-setup

Syntax **lsp-setup** [**detail**]
no lsp-setup

Context debug>router>mpls>event

Description This command debugs LSP setup events.

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

Parameters **detail —** Displays detailed information about LSP setup events.

mbb

Syntax **mbb** [**detail**]
no mbb

Context debug>router>mpls>event

Description This command debugs the state of the most recent invocation of the make-before-break (MBB) functionality.

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

Parameters **detail —** Displays detailed information about MBB events.

misc

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

Context debug>router>mpls>event
debug>router>rsvp>event

Description This command debugs miscellaneous events.

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

Parameters **detail —** Displays detailed information about miscellaneous events.

xc

Syntax **xc** [**detail**]
no xc

Context debug>router>mpls>event

Description This command debugs cross connect events.

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

Parameters **detail —** Displays detailed information about cross connect events.

rsvp

Syntax [**lsp** *lsp-name*] [**sender** *source-address*] [**endpoint** *endpoint-address*] [**tunnel-id** *tunnel-id*] [**lsp-id** *lsp-id*] [**interface** *ip-int-name*]
no rsvp

Context debug>router

Description This command enables and configures debugging for RSVP.

Parameters **lsp** *lsp-name* — Name that identifies the LSP. The LSP name can be up to 32 characters long and must be unique.

sender *source-address* — The system IP address of the sender.

endpoint *endpoint-address* — The far-end system IP address.

tunnel-id *tunnel-id* — The RSVP tunnel ID.

Values 0 — 4294967295

lsp-id *lsp-id* — The LSP ID.

Values 1 — 65535

interface *ip-int-name* — The interface name. The interface name can be up to 32 characters long and must be unique. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

nbr

Syntax **nbr** [**detail**]
no nbr

Context debug>router>rsvp>event

Description This command debugs neighbor events.

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

Parameters **detail —** Displays detailed information about neighbor events.

path

Syntax **path** [**detail**]
no path

Context debug>router>rsvp>event

Description This command debugs path-related events.

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

Parameters **detail —** Displays detailed information about path-related events.

resv

Syntax **resv** [**detail**]
no resv

Context debug>router>rsvp>event

Description This command debugs RSVP reservation events.

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

Parameters **detail —** Displays detailed information about RSVP reservation events.

te-threshold-update

Syntax **te-threshold-update**
no te-threshold-update

Context debug>router>rsvp>event
debug>router>rsvp>ip-int-name>event

Description This command debugs the te-threshold-update events.

The **no** form of this command disables the debugging

packet

Syntax [**no**] **packet**

Context debug>router>rsvp>

Description This command enters the syntax to debug packets.

all

Syntax **all** [**detail**]
no all

Context debug>router>rsvp>packet

Description This command debugs all packets.

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

Parameters **detail —** Displays detailed information about all RSVP packets.

hello

Syntax **hello** [**detail**]
no hello

Context debug>router>rsvp>packet

Description This command debugs hello packets.

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

Parameters **detail —** Displays detailed information about hello packets.

path

Syntax **path** [**detail**]
no path

Context debug>router>rsvp>packet

Description This command enables debugging for RSVP path packets.

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

Parameters **detail —** Displays detailed information about path-related events.

patherr

Syntax **patherr** [**detail**]
no patherr

Context debug>router>rsvp>packet

Description This command debugs path error packets.

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

Parameters **detail —** Displays detailed information about path error packets.

pathtear

Syntax **pathtear** [**detail**]
no pathtear

Context debug>router>rsvp>packet

Description This command debugs path tear packets.

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

Parameters **detail —** Displays detailed information about path tear packets.

resv

Syntax **resv** [**detail**]
no resv

Context debug>router>rsvp>packet

Description This command enables debugging for RSVP resv packets.

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

Parameters **detail —** Displays detailed information about RSVP Resv events.

resverr

Syntax **resverr** [**detail**]
no resverr

Context debug>router>rsvp>packet

Description This command debugs ResvErr packets.

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

Parameters **detail —** Displays detailed information about ResvErr packets.

resvtear

Syntax **resvtear** [**detail**]
no resvtear

Context debug>router>rsvp>packet

Description This command debugs ResvTear packets.

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

Parameters **detail —** Displays detailed information about ResvTear packets.