
Tools Configuration Commands

Generic Commands

tools

Syntax `tools`

Context `root`

Description This command enables the context to enable useful tools for debugging purposes.

Default `none`

Parameters `dump` — Enables dump tools for the various protocols.
`perform` — Enables tools to perform specific tasks.

Dump Commands

dump

Syntax `dump router-name`

Context tools

Description The context to display information for debugging purposes.

Default none

Parameters *router-name* — Specifies a router name, up to 32 characters in length.

Default Base

aps

Syntax `aps aps-id [clear]`
`aps mc-aps-signaling [clear]`
`aps mc-aps-ppp [clear]`

Context tools>dump>aps

Description This command displays Automated Protection Switching (APS) information.

Parameters **clear** — Removes all Automated Protection Switching (APS) operational commands.

mc-aps-signaling — Displays multi-chassis APS signaling information.

mc-aps-ppp — Displays multi-chassis APS PPP information.

Sample Output

```
*A:AS_SR7_2# tools dump aps aps-33

GrpId = 33, state = Running, mode:cfg/oper = Bi-directional/Bi-directional
  revert = 0, workPort: N/A, protPort: 2/1/1, activePort: working
  rxK1 = 0x0 (No-Req on Protect), physRxK1 = 0x0, rxK2 = 0x5
  txK1 = 0x0 (No-Req on Protect), physTxK1 = 0x0, txK2 = 0x5
  K1ReqToBeTxed = 0x0, K1ChanToBeTxed = 0x0, lastRxReq = 0xc
  MC-APS Nbr = 100.100.100.1 (Up), advIntvl = 10, hold = 30
  workPort: status = OK, Tx-Lais = None, sdCnt = 1, sfCnt = 1
    numSwitched = 1, switchSecs = 0, lastSwitched = 07/25/2007 08:00:12
    disCntTime = , alarms = , switchCmd = No Cmd
  protPort: status = OK, Tx-Lais = None, sdCnt = 1, sfCnt = 0
    numSwitched = 1, switchSecs = 0, lastSwitched = 07/25/2007 08:03:39
    disCntTime = , alarms = , switchCmd = No Cmd
  GrpStatus: OK, mmCnt = 1, cmCnt = 1, psbfCnt = 1, feplfCnt = 2
  LocalSwitchCmd: priority = No-Req, portNum = 0
  RemoteSwitchCmd: priority = No-Req, portNum = 0
  Running Timers = mcAdvIntvl mcHold
  processFlag = apsFailures = , sonet = Y
```

```

DebugInfo: dmEv = 0, dmClrEv = 0, amEv = 1, amClrEv = 1
           cmEv = 1, cmClrEv = 1, psbfEv = 1, psbfClrEv = 1
           feplfEv = 2, feplfClrEv = 2, wtrEv = 0, psbfDetectEv = 0
           wSdEv = 1, wSfEv = 2, pSdEv = 1, pSfEv = 1
           portStatusEv = 8, rxK1Ev = 9, txLaisEv = 2, lastEvName = FeplClr
           CtlUpEv = 3, CtlDnEv = 2, wAct = 0, wDeAct = 0
Seq      Event TxK1/K2 RxK1/K2 Dir Active Time
===      =====
000      ProtAdd 0xc005 0x0000 Tx--> Work 497 02:18:10.590
001      RxKByte 0xc005 0x6dea Rx<-- Work 497 02:20:14.820
002      RxKByte 0xc005 0xc005 Rx<-- Work 497 02:21:30.970
003      RxKByte 0xc005 0x2005 Rx<-- Work 497 02:21:36.530
004      pSFClr 0x0005 0x2005 Tx--> Work 497 02:21:40.590
005      RxKByte 0x0005 0x0005 Rx<-- Work 497 02:21:40.600
006      RxKByte 0x0005 0xc115 Rx<-- Work 497 02:25:22.840
007      RxKByte 0x2115 0xc115 Tx--> Prot 497 02:25:22.840
008      RxKByte 0x2115 0xa115 Rx<-- Prot 000 00:00:47.070
009      RxKByte 0x2115 0x1115 Rx<-- Prot 000 00:00:47.560
010      RxKByte 0x2115 0xc005 Rx<-- Prot 000 00:00:57.010
011      RxKByte 0x2005 0xc005 Tx--> Work 000 00:00:57.010
012      RxKByte 0x2005 0x0005 Rx<-- Work 000 00:01:06.170
013      RxKByte 0x0005 0x0005 Tx--> Work 000 00:01:06.170

```

Sample Output

```

:AS_SR7_1# tools dump aps mc-aps-ppp

pppmMcsModStarted = Yes
pppmMcsDbgDoSync = Yes
pppmMcsApsGrpHaAuditDone = Yes
pppmMcsPostHaSyncedApsGrpId = 47
pppmMcsMcApsChanCnt = 1280

pppmMcsDbgRxPktCnt = 2560
pppmMcsDbgRxPktNotProcessedCnt = 0
pppmMcsDbgRxPktInvalidCnt = 0
pppmMcsDbgInconsistentRxPktDropCnt = 0
pppmMcsDbgInconsistentTxPktDropCnt = 1176
pppmMcsDbgTxPktNotSentCnt = 0
pppmMcsDbgTxPktSentCnt = 25
pppmMcsDbgEvtDropCnt = 0
pppmMcsDbgMemAllocErrCnt = 0
pppmMcsDbgReTxCnt = 0
pppmMcsDbgReTxExpCnt = 0
pppmMcsDbgReReqCnt = 0

pppmMcsStateAckQueueCnt (curr/peek) = 0/130
pppmMcsStateReqQueueCnt (curr/peek) = 0/1280
pppmMcsStateReReqQueueCnt (curr/peek) = 0/256
pppmMcsStateTxQueueCnt (curr/peek) = 0/512
pppmMcsStateReTxQueueCnt (curr/peek) = 0/130

MC-APS Peer Info :
-----

Grp 13 Addr 100.100.100.2 - Up
Grp 20 Addr 100.100.100.2 - Up

```

Dump Commands

```
Grp 35 Addr 100.100.100.2 - Up
Grp 43 Addr 100.100.100.2 - Up
Grp 47 Addr 100.100.100.2 - Up
```

```
Number of pppmMcs Evt Msgs dispatched:
ctl_link_state : 0
ctl_link_up_tmr : 0
ctl_link_down_tmr : 0
ha_audit_done : 0
```

Sample Output

```
*A:eth_aps_sr7# tools dump aps mc-aps-signaling
```

```
MC-APS Control Debug Counters :
-----
Ctl Pkt Rx = 0
Invalid Rx Ctl Pkt = 0
Incompatible Rx Ctl Pkt = 0
Nbr not Rx Ctl Pkt = 0
Invalid Rx Ctl Pkt Tlv = 0
Ctl Pkt Rx-ed before HaReady = 0
Not sent Tx Ctl Pkt = 0

MC-APS-LAG Debug Counters :
-----
Ctl Pkt Rx from IOM          = 0

Not processed Rx Ctl Pkt     = 0
Invalid Rx Ctl Pkt          = 0
Incompatible Rx Ctl Pkt     = 0
Rx Ctl Pkt queueing failed = 0

Ctl Pkt Tx (direct)         = 0
Ctl Pkt Tx (UDP socket)    = 0
Not sent Tx Ctl Pkt        = 0

Route Update                 = 0
Matched Route Update        = 0

Msg Buf Alloc Failed        = 0

MC-APS-LAG NbrRoute Entries :
-----
NbrAddr 1.1.1.1 NextHopAddr ::
  EgressIfIndex = 0
  EgressPortId = Unknown
  app refCnt    = 1
  refCntTotal  = 1
```

lag

Syntax lag lag-id lag-id

Context tools>dump

- Description** This tool displays LAG information.
- Parameters** *lag-id* — Specifies an existing LAG id.
- Values** 1 — 800

```
ALA-12>tools>dump# lag lag-id 1
Port state      : Ghost
Selected subgrp : 1
NumActivePorts  : 0
ThresholdRising : 0
ThresholdFalling: 0
IOM bitmask     : 0
Config MTU      : 1514
Oper. MTU       : 1514
Bandwidth       : 100000
ALA-12>tools>dump#
```

ldp-treetrace

- Syntax** **ldp-treetrace** {**prefix** *ip-prefix/mask*| **manual-prefix** *ip-prefix/mask*}[**path-destination** *ip-address*]
[**trace-tree**]
- Context** tools>dump
- Description** This command displays TreeTrace information.
- Parameters** **prefix** *ip-prefix/mask* — Specifies the IP prefix and host bits.
- Values**
- | | |
|------------|-----------|
| host bits: | must be 0 |
| mask: | 0 — 32 |

Sample Output

Automated ldp-treetrace:

Note that the **tools dump ldp-treetrace prefix** command displays entries only if **ldp-treetrace** is enabled (**configure test-oam ldp-treetrace no shutdown**).

```
*A:Dut-B# tools dump ldp-treetrace prefix 10.20.1.6/32
```

```
Discovered Paths:
```

```
=====
```

Id	PathDst DiscoveryTtl	EgrNextHop ProbeState	ReplyRtrAddr ProbeTmOutCnt	DiscoveryTime RtnCode
====	=====	=====	=====	=====
001	127.1.0.255 002	10.10.41.2 OK	10.10.9.6 00	11/09/2010 16:15:54 EgressRtr
002	127.2.0.255 002	10.10.42.2 OK	10.10.9.6 00	11/09/2010 16:15:54 EgressRtr
003	127.3.0.255 002	10.10.43.2 OK	10.10.9.6 00	11/09/2010 16:15:54 EgressRtr
004	127.4.0.255 002	10.10.44.2 OK	10.10.9.6 00	11/09/2010 16:15:54 EgressRtr
005	127.5.0.255 002	10.10.45.2 OK	10.10.9.6 00	11/09/2010 16:15:54 EgressRtr

Dump Commands

```
ldp-treetrace discovery state: Done
ldp-treetrace discovery status: ' OK '
Total number of discovered paths: 5
Total number of probe-failed paths: 0
Total number of failed traces: 0
*A:Dut-B#
Total number of Hops: 2
```

Manual ldp tree-trace

The **tools dump ldp-treetrace manual-prefix** command displays entries discovered by a previously run ldp-treetrace manual test.

```
*A:Dut-B# tools dump ldp-treetrace manual-prefix 10.20.1.6/32
Discovered Paths:
=====
Id      PathDst          EgrNextHop      ReplyRtrAddr     DiscoveryTime
      DiscoveryTtl      ProbeState      ProbeTmOutCnt    RtnCode
=====
001     127.1.0.255      10.10.41.2      10.10.9.6        11/09/2010 16:20:01
              002              OK              00              EgressRtr
002     127.2.0.255      10.10.42.2      10.10.9.6        11/09/2010 16:20:01
              002              OK              00              EgressRtr
003     127.3.0.255      10.10.43.2      10.10.9.6        11/09/2010 16:20:01
              002              OK              00              EgressRtr
004     127.4.0.255      10.10.44.2      10.10.9.6        11/09/2010 16:20:01
              002              OK              00              EgressRtr
005     127.5.0.255      10.10.45.2      10.10.9.6        11/09/2010 16:20:01
              002              OK              00              EgressRtr
```

```
ldp-treetrace discovery state: Done
ldp-treetrace discovery status: ' OK '
Total number of discovered paths: 5
Total number of failed traces: 0
*A:Dut-B#
```

```
*A:Dut-B# tools dump ldp-treetrace manual-prefix 10.20.1.6/32 path-destination 127.1.0.255
FEC: 10.20.1.6/32 PathDst: 127.1.0.255
=====
Protocol Legend: L - LDP, R - RSVP, U - Not Applicable

HopId HopAddr          HopRouterId      TTL Label1  Label2  Label3  Label4  Label5
=====
006     10.10.9.6          10.20.1.6 002 131071L 000000U 000000U 000000U 000000U
001     10.10.41.2         10.20.1.4 001 131069L 000000U 000000U 000000U 000000U

Total number of Hops: 2
*A:Dut-B#
```

map-to-phy-port

Syntax `map-to-phy-port {ccag ccag-id | lag lag-id | eth-tunnel tunnel-index}[isid isid [end-isid isid] | service service-id | svc-name [end-service service-id | svc-name]] [summary]`

Context `tools>dump`

Description This command maps LAG or Ethernet tunnel IDs to a physical port. This provides the ability to display ECMP/LAG (hashing) of services (Epipes) to monitor distribution of service traffic over multiple links. The administrator must specify the service (*svc-id*), service range (*svc-id* and *end-svc-id*) or LAG (*lag-id*) when issuing the **map-to-phy-port** command. As a result the system will display the LAG member link with which the service(s) are associated.

This command does not support PBB or VC-switching services and only return associations for LAGs and services are operationally

up/active.

Parameters `ccag ccag-id` — Specifies the CCAG ID.

Values 1 — 8

`lag lag-id` — Specifies the LAG ID.

Values 1 — 200

`ISID isid` — Specifies the ISID ID.

Values 0 — 16777215

`service service-id` — Specifies the service ID.

Values 1 — 2147483650
svc-name:64 char max

`eth-tunnel tunnel-index` — Specifies the tunnel index ID.

Values 1 — 1024

nat

Syntax `nat`

Context `tools>dump`

Description This command enables the context to configure NAT parameters.

deterministic-mapping

Syntax `deterministic-mapping outside-ip ipv4-address router router-instance outside-port [1..65535]`

Context `tools>dump>nat`

Dump Commands

Description This command displays deterministic mapping information.

Parameters **outside-ip** *ipv4-address* — Specifies the outside ipv4 address.

router *router-instance* — Specifies the router instance.

Values	ipv4-address	a.b.c.d
	router-instance	<router-name> <service-id>
	router-name	"Base"
	service-id	[1..2147483647]

outside-port [1..65535] — Specifies the outside port.

histogram

Syntax **histogram router** *router-instance* **pool** *pool-name* **bucket-size** [1..65536] **num-buckets** [2..50]

Context tools>dump>nat

Description This command displays a NAT pool port usage histogram

Parameters **router** *router-instance* —

pool *pool-name* — Specifies the identification of the NAT pool.

bucket-size [1..65536] — Specifies the unit of the X-axis of the histogram; a value of ten, for example, would return in a histogram with results for [0-9], [10-19], [20-29], ... ports.

num-buckets [2..50] — Specifies the size of the histogram; a value of five, for example, would result in five results: [0-9], [10-19], [20-29], [30-39], [40-infinite].

isa

Syntax **isa**

Context tools>dump>nat

Description This command displays NAT ISA information.

resources

Syntax **resources mda** *mda-id*

Context tools>dump>nat>isa

Description This command displays ISA resources for an MDA.

Parameters *mda-id* — Displays information for the specified MDA.

Values	<mda-id>	slot/mda
	slot	1..10
	mda	1..2

sessions

Syntax `sessions [nat-group nat-group-id] [mda mda-id] [protocol {icmp | tcp | udp}] [inside-ip ip-address] [inside-router router-instance] [inside-port port-number] [outside-ip ipv4-address] [outside-port port-number] [foreign-ip ipv4-address] [foreign-port port-number] [dslite-address ipv6-address] [destination-ip ipv4-address] [destination-port port-number] [wlan-gw-ue ieee-address] [upnp]`

Context `tools>dump>nat`

Description This command displays NAT session information.

Parameters `nat-group nat-group-id` — NAT group identifier.
`mda mda-id` — Displays information for the specified MDA.

Values	<mda-id>	slot/mda
	slot	1..10
	mda	1..2

persistence

Syntax `persistence`

Context `tools>dump`

Description This command enables the context to display persistence information for debugging purposes.

submgt

Syntax `submgt [record record-key]`

Context `tools>dump>persistence`

Description This command displays subscriber management persistence information.

Dump Commands

summary

Syntax `summary`

Context `tools>dump>persistence`

Description The context to display persistence summary information for debugging purposes.

Sample Output

```
A:ALA-B# tools dump persistence summary
=====
Persistence Summary on Slot A
=====
Client           Location          Entries in use    Status
-----
xxxxxx          cf1:\l2_dhcp.pst    200              ACTIVE
-----
Persistence Summary on Slot B
=====
Client           Location          Entries in use    Status
-----
xxxxxx          cf1:\l2_dhcp.pst    200              ACTIVE
-----
A:ALA-B#
```

dwdm

Syntax `dwdm`

Context `tools>dump>port`

Description This command displays information for Dense Wavelength Multiplexing.

coherent

Syntax `coherent`

Context `tools>dump>port>dwdm`

Description This command displays the coherent optical information.

cpr-wndw-sz-sr*

Syntax `cpr-wndw-sz-sr*`

Context `tools>dump>port>dwdm>coherent`

Description This command displays the Carrier Phase Recovery window size search status and result.

cpr-wndw-sz-srch-info

Syntax `cpr-wndw-sz-srch-info`

Context `tools>dump>port>dwdm>coherent`

Description This command displays the Carrier Phase Recovery window size search information.

pcs

Syntax `pcs [clear]`

Context `tools>dump>port`

Description This command displays Physical Coding Sublayer information.
clear — Using this keyword will clear the information after reading.

Sample Output

100GE example

IEEE 802.3ba PCS information of interest for 1/1/1

PCS summary information:

```
All lanes occupied      : No
All lanes aligned      : No
All lanes AM locked    : No
All lanes block locked : Yes
Hi BER detected        : No
Last Cleared Time      : 11/06/2014 09:53:57
```

PCS detailed lane information:

PCS Lane	Rx Lane	Block Lock	Marker Lock	Sync Header Errors	BIP Errors
0	9	Locked	Locked	No	No
1	19	Locked	Locked	No	No
2	8	Locked	No Lock	Yes	No
3	18	Locked	Locked	No	No
4	7	Locked	Locked	No	No
5	17	Locked	Locked	No	No
6	16	Locked	Locked	No	No
7	6	Locked	Locked	No	No
8	5	Locked	Locked	No	No
9	15	Locked	Locked	No	No
10	14	Locked	Locked	No	No
11	4	Locked	Locked	No	No
12	3	Locked	Locked	No	No
13	13	Locked	Locked	No	No
14	12	Locked	Locked	No	No
15	2	Locked	Locked	No	No
16	11	Locked	Locked	No	No
17	1	Locked	Locked	No	No
18	0	Locked	Locked	No	No

Dump Commands

```
19          10          Locked      Locked      No          No
-----
* Indicates Loss of Lock detected since last cleared time.
=====
```

40GE example

IEEE 802.3ba PCS information of interest for 9/1/1

```
PCS summary information:
All lanes occupied      : Yes
All lanes aligned       : Yes
All lanes AM locked     : Yes
All lanes block locked  : Yes
Hi BER detected         : No
Last Cleared Time      : 11/06/2014 09:54:59
```

PCS detailed lane information:

PCS Lane	Rx Lane	Block Lock	Marker Lock	Sync Header Errors	BIP Errors
0	2	Locked	Locked	No	No
1	0	Locked	Locked*	No	Yes
2	1	Locked	Locked	No	No
3	3	Locked	Locked	No	No

```
-----
* Indicates Loss of Lock detected since last cleared time.
=====
```

redundancy

Syntax `redundancy`

Context `tools>dump`

Description This command enables the context to dump tools for redundancy.

multi-chassis

Syntax `multi-chassis`

Context `tools>dump>redundancy>multi-chassis`

Description This command enables the context to dump tools for multi-chassis redundancy.

mc-endpoint

Syntax `mc-endpoint peer ip-address`

Context `tools>dump>redundancy>multi-chassis`

Description This command dumps multi-chassis endpoint information.

Parameters `peer ip-address` — Specifies the peer's IP address.

mc-ring

Syntax `mc-ring`
`mc-ring peer ip-address [ring sync-tag]`

Context `tools>dump>redundancy>multi-chassis`

Description This command dumps multi-chassis ring information.

`peer ip-address` — Specifies the peer's IP address.

`ring sync-tag` — Specifies the ring's sync-tag created in the `config>redundancy>mc>peer>mcr>ring` context.

srrp-sync-database

Syntax `srrp-sync-database [instance instance-id] [peer ip-address]`

Context `tools>dump>redundancy>multi-chassis`

Description This command dumps SRRP database information.

`peer ip-address` — Specifies the peer's IP address.

`instance instance-id` — Dumps information for the specified Subscriber Router Redundancy Protocol instance configured on this system.

Values 1 — 4294967295

sync-database

Syntax `sync-database [peer ip-address] [port port-id | lag-id] [sync-tag sync-tag] [application application] [detail] [type type]`

Context `tools>dump>redundancy>multi-chassis`

Description This command dumps MCS database information.

`peer ip-address` — Specifies the peer's IP address.

`port port-id | lag-id` — Indicates the port or LAG ID to be synchronized with the multi-chassis peer.

Values `slot/mda/port` or `lag-lag-id`.

`sync-tag sync-tag` — Specifies a synchronization tag to be used while synchronizing this port with the multi-chassis peer.

`application application` — Specifies a particular multi-chassis peer synchronization protocol application.

Values `dhcp-server:` local dhcp server
`igmp:` Internet group management protocol

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igmp-snooping: igmp-snooping
mc-ring: multi-chassis ring
mld-snooping: multicast listener discovery-snooping
srrp: simple router redundancy protocol
sub-host-trk: subscriber host tracking
sub-mgmt: subscriber management

type *type* — Indicates the locally deleted or alarmed deleted entries in the MCS database per multi-chassis peer.

Values alarm-deleted, local-deleted

detail — Displays detailed information.

ppp

Syntax **ppp** *port-id*

Context tools>dump

Description This command displays PPP information for a port.

Default none

Parameters *port-id* — Specifies the port ID.

Values *port-id* *slot/mda/port[.channel]*
bundle-id: *bundle-type-slot/mda.bundle-num*
bundle: keyword
type: ppp
bundle-num: 1 — 256
bpggrp-id: *bpggrp-type-bpggrp-num*
bpggrp: keyword
type: ppp
bpggrp-num: 1 — 1280
aps-id: *aps-group-id[.channel]*
aps: keyword
group-id: 1 — 64

Sample Output

```
*A:sr7# tools dump ppp aps-1.1.1.1
=====
Id          : aps-1.1.1.1      ppp unit   : 40
member of   : bpggrp-ppp-1
=====
looped back : no             dbgMask    : 0x0
-----
LCP
-----
phase       : NETWORK        state       : OPENED
passive     : off            silent      : off
restart     : on
```

```

mru          : 1500          mtu          : 1502
ack'd peer mru : 1500
got local mrru : 1524
local magic   : 0x0          peer magic  : 0x0

keepalive    : on           echo num    : 2
echo timer   : on           echos fail  : 3
echo intv    : 10           echos pend  : 0

options      mru      asyncMap upap    chap    magic    pfc
we negotiate Yes     No      No     No     No     Yes
peer ack'd   Yes     No      No     No     No     No
we allow     Yes     No      No     No     No     Yes
we ack'd     Yes     No      No     No     No     No

options      acfc     lqr      mrru    shortSeq endPoint mlhdrfmt
we negotiate Yes     No      Yes     No     Yes     No
peer ack'd   No      No      Yes     No     Yes     No
we allow     Yes     No      Yes     Yes    Yes     No
we ack'd     No      No      Yes     No     Yes     No
...
=====
*A:sr7#

```

system-resources

Syntax `system-resources slot-number`

Context `tools>dump`

Description This command displays system resource information.

Default none

Parameters *slot-number* — Specifies a specific slot to view system resources information.

Service Commands

service

Syntax `service`

Context `tools>dump`

Description Use this command to configure tools to display service dump information.

base-stats

Syntax `base-stats [clear]`

Context `tools>dump>service`

Description Use this command to display internal service statistics.

Default none

Parameters `clear` — Clears stats after reading.

iom-stats

Syntax `iom-stats [clear]`

Context `tools>dump>service`

Description Use this command to display IOM message statistics.

Default none

Parameters `clear` — Clears stats after reading.

provider-tunnels

Syntax `provider-tunnels`

Context `tools>dump>service>id`

Sample Output

```
*A:Dut-B# /tools dump service id 1 provider-tunnels
```

```
=====
VPLS 1 Inclusive Provider Tunnels Originating
=====
```



```

ipmsi (LDP)                                P2MP-ID  Root-Addr
-----
8193                                         8193     10.20.1.2
-----

=====
VPLS 1 Inclusive Provider Tunnels Terminating
=====
ipmsi (LDP)                                P2MP-ID  Root-Addr
-----
                                         8193     10.20.1.3
                                         8193     10.20.1.4
                                         8193     10.20.1.6
                                         8193     10.20.1.7
-----

```

l2pt-diags

Syntax **l2pt-diags**
l2pt-diags clear
l2pt-diags detail

Context tools>dump>service

Description Use this command to display L2pt diagnostics.

Default none

Parameters **clear** — Clears the diags after reading.
detail — Displays detailed information.

Sample Output

```

A:ALA-48>tools>dump>service# l2pt-diags
[ l2pt/bpdu error diagnostics ]
  Error Name      | Occurence   | Event log
-----+-----+-----
[ l2pt/bpdu forwarding diagnostics ]

  Rx Frames   | Tx Frames   | Frame Type
-----+-----+-----
A:ALA-48>tools>dump>service#

A:ALA-48>tools>dump>service# l2pt-diags detail
[ l2pt/bpdu error diagnostics ]
  Error Name      | Occurence   | Event log
-----+-----+-----
[ l2pt/bpdu forwarding diagnostics ]

  Rx Frames   | Tx Frames   | Frame Type
-----+-----+-----
[ l2pt/bpdu config diagnostics ]
WARNING - service 700 has l2pt termination enabled on all access points :

```

Service Commands

```
consider translating further down the chain or turning it off.
WARNING - service 800 has l2pt termination enabled on all access points :
consider translating further down the chain or turning it off.
WARNING - service 9000 has l2pt termination enabled on all access points :
consider translating further down the chain or turning it off.
WARNING - service 32806 has l2pt termination enabled on all access points :
consider translating further down the chain or turning it off.
WARNING - service 90001 has l2pt termination enabled on all access points :
consider translating further down the chain or turning it off.
A:ALA-48>tools>dump>service#
```

mc-endpoint

Syntax `mc-endpoint mc-ep-id`

Context `tools>dump>service`

Description Use this command to display multi-chassis endpoint information.

Parameters *mc-ep-id* — Specifies a multi-chassis endpoint ID.

Values 1 — 4294967295

Sample Output

```
*A:Dut-B# tools dump service mc-endpoint 1
MC Endpoint Info
mc-endpoint id           : 1
endpoint                 : mcep-t1
service                  : 1
peer ref type            : peer-name
peer                     : Dut-C
mc sel logic             : peer selected active
selection master         : No
retransmit pending       : No
initial config sync      : Yes
config sync              : Yes
peer not mcep            : No
peer acked non-mcep      : No
config mismatch          : No
initial state rx         : Yes
initial state sync       : Yes
state sync                : Yes
can aggregate             : Yes
sel peer active          : No
peer sel active          : Yes
passive mode active      : No
own eligible force       : No
own eligible double active : Yes
own eligible pw status bits : 0
own eligible precedence  : 2
own eligible conf chg    : No
own eligible revert wait : No
peer eligible force      : No
peer eligible double active : Yes
```

```

peer eligible pw status bits : 0
peer eligible precedence    : 3
peer eligible conf chg      : No
peer eligible revert wait    : No
*A:Dut-B# tools perform service id 1 endpoint mcep-t1 force-switchover 221:1
*A:Dut-B>show#
*A:Dut-B# show service id 1 endpoint
=====
Service 1 endpoints
=====
Endpoint name           : mcep-t1
Description             : (Not Specified)
Revert time             : 0
Act Hold Delay          : 0
Ignore Standby Signaling : false
Suppress Standby Signaling : false
Block On Mesh Fail      : true
Multi-Chassis Endpoint  : 1
MC Endpoint Peer Addr   : 3.1.1.3
Psv Mode Active         : No
Tx Active               : 221:1(forced)
Tx Active Up Time       : 0d 00:00:17
Revert Time Count Down  : N/A
Tx Active Change Count  : 6
Last Tx Active Change   : 02/14/2009 00:17:32
-----
Members
-----
Spoke-sdp: 221:1 Prec:1                               Oper Status: Up
Spoke-sdp: 231:1 Prec:2                               Oper Status: Up
=====
*A:Dut-B#

```

radius-discovery

Syntax `radius-discovery [svc-id service-id]`

Context `tools>dump>service`

Description Use this command to display RADIUS Discovery membership information.

Sample Output

```

A:ALA-48# tools dump service radius-discovery
-----
Service Id 103 Vpn Id 103 UserName 901:103 (Vpn-Id) PolicyName RAD_Disc for Service 103
Waiting for Session Timeout (Polling 60), Seconds in State 17
-----
      SdpId      Vcid  Deliver      Ip Addr          VcType      Mode      Split Horizon
-----
          3         103    LDP    10. 20.  1.  3    Ether    Spoke
          4         103    LDP    10. 20.  1.  2    Ether    Spoke
-----
A:ALA-48#

```

Service Commands

vpls-fdb-stats

Syntax	vpls-fdb [clear]
Context	tools>dump>service
Description	Use this command to display VPLS FDB statistics.
Default	none
Parameters	clear — Clears stats after reading.

vpls-mfib-stats

Syntax	vpls-mfib-stats [clear]
Context	tools>dump>service
Description	Use this command to display VPLS MFIB statistics.
Default	none
Parameters	clear — Clears stats after reading.

Router Commands

router

Syntax	router <i>router-instance</i>
Context	tools>dump tools>perform
Description	This command enables tools for the router instance.
Default	none
Parameters	router <i>router-instance</i> — Specifies the router name or service ID.
Values	<i>router-name:</i> Base , management <i>service-id:</i> 1 — 2147483647
Default	Base

dhcp

Syntax	dhcp
Context	tools>dump>router
Description	This command enables the context to configure dump router tools for DHCP.

group-if-mapping

Syntax	group-if-mapping [clear]
Context	tools>dump>router>dhcp
Description	This command dumps group interface mapping information stored in by the DHCP cache for the Routed CO model of operation.

group-if-stats

Syntax	group-if-stats [clear]
Context	tools>dump>router>dhcp
Description	This command dumps group interface statistics information about the DHCP cache for the Routed CO model of operation.

lag

- Syntax** lag
- Context** tools>perform
- Description** This command configures tools to control LAG.

clear-force

- Syntax** clear-force all-mc
clear-force peer-mc *ip-address*
clear-force lag-id *lag-id* [**sub-group** *sub-group-id*]
- Context** tools>perform>lag
- Description** This command clears a forced status.
- Parameters** all-mc — Clears all multi-chassis LAG information.
lag-id *lag-id* — Specifies an existing LAG id.
- Values** 1 — 200

force

- Syntax** force all-mc {**active** | **standby**}
force peer-mc *peer-ip-address* {**active** | **standby**}
force lag-id *lag-id* [**sub-group** *sub-group-id*] {**active** | **standby**}
- Context** tools>perform>lag
- Description** This command forces an active or standby status.
- Parameters** all-mc — Clears all multi-chassis LAG information.
active — If **active** is selected, then all drives on the active CPM are forced.
standby — If **standby** is selected, then all drives on the standby CPM are forced.
all-mc — Clears all multi-chassis LAG information.
lag-id *lag-id* — Specifies an existing LAG id.
- Values** 1 — 200

log

- Syntax** log
- Context** tools>perform

Description Tools for event logging.

test-event

Syntax **test-event**

Context tools>perform>log

Description This command causes a test event to be generated. The test event is LOGGER event #2011 and maps to the tmnxEventSNMP trap in the TIMETRA-LOG-MIB.

persistence

Syntax **persistence**

Context tools>perform

Description This command enables the context to configure downgrade parameters.

downgrade

Syntax **downgrade target-version *target* [*reboot*]**

Context tools>perform>persistence

Description This command downgrades persistence files to a previous version.

This command is used when a major release SR OS software downgrade is required and the persistency files (dhcp_server.00x or sumbmgmt.00x) from the previous software release are lost or unusable because the lease information is already outdated or recent lease information would be lost. This command can be used to translate in advance the persistency files of the current running software version with up to date lease data to the target software version SR OS which will be downgraded to shortly afterwards.

Parameters **target-version *target*** — Specifies the downgrade version.

reboot — Specifies to reboot the system after a successful conversion.

ldp

Syntax **ldp**

Context tools>dump>router

Description This command enables dump tools for LDP.

Default none

Router Commands

interface

Syntax	interface [<i>ip-int-name</i> <i>ip-address</i>]
Context	tools>dump>router>ldp
Description	This command displays information for an LDP interface.
Default	none
Parameters	<i>ip-int-name</i> — Specifies the interface name. <i>ip-address</i> — Specifies the IP address.

peer

Syntax	peer <i>ip-address</i>
Context	tools>dump>router>ldp
Description	This command displays information for an LDP peer.
Default	none
Parameters	<i>ip-address</i> — Specifies the IP address.

Sample Output

```
*A:Dut-A>config>router>ldp# \tools dump router ldp peer 10.20.1.2
Peer                : 10.20.1.2
Local LSR           : Cfgd - system, inUse - system
Local LSR i/f       : Cfgd - 0, inUse - 0
LSR-ID              : 10.20.1.1:0
Transport Address: 10.20.1.1
Admin State         : Up                               Oper State         : Up
Num Adjacencies    : 1
Create Time         : 01/23/13 23:16:53.585           Last Change        : 01/23/13 23:16:53.585
Last Oper Up       : 000 02:13:00.100                 Last Oper Down     : 000 00:00:00.000
KeepAlive Factor   : 3                               KeepAlive Timeout  : 30
Hello Timeout      : 15                               Oper HelloTimeout  : 480
Hello Factor       : 3
Hello Reduction    : Enable(Inh)                     Hello Rdctn Fctr   : 3(Inh)
Consist HelloSent  : 3
Backoff Time       : 15                               Max Backoff Time   : 120
Discovery Socket   : 0
Config Seq Num     : 3601982061                       Session Instance   : 0
Auto Create        : Manual                           In Use by SDP      : No
Cleanup Delay      : No
OperDown Reason    : UP
*A:Dut-A>config>router>ldp#
```

fec

Syntax **fec p2mp-id identifier root ip-address**
fec prefix ip-address[/mask]
fec root ip-address source ip-address group mcast-address [rd rd]
fec vc-type vc-type vc-id vc-id

Context tools>dump>router>ldp

Description This command displays information for an LDP FEC.

Default none

Parameters *identifier* — Specifies the identifier for this P2MP FEC.

root ip-address — Specifies the IP address of the root for this P2MP FEC.

ip-prefix/mask — Specifies the IP prefix and host bits.

Values	host bits:	must be 0
	mask:	0 — 32

vc-type — Specifies the VC type signaled for the spoke or mesh binding to the far end of an SDP. The VC type is a 15 bit-quantity containing a value which represents the type of VC. The actual signaling of the VC type depends on the signaling parameter defined for the SDP. If signaling is disabled, the **vc-type** command can still be used to define the Dot1q value expected by the far-end provider equipment. A change of the binding's VC type causes the binding to signal the new VC type to the far end when signaling is enabled.

VC types are derived according to IETF *draft-martini-l2circuit-trans-mpls*.

- Ethernet — The VC type value for Ethernet is 0x0005.
- VLAN — The VC type value for an Ethernet VLAN is 0x0004.

group mcast-address — Specifies whether the mcast address is IPv4 or IPv6.

Values **ipv4-mcast-addr, ipv6-mcast-addr**

rd rd — Specifies the route distinguisher value.

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

vc-id — Specifies the virtual circuit identifier.

Values 1 — 4294967295

instance

Syntax **instance**

Context tools>dump>router>ldp

Description This command displays information for an LDP instance.

Sample Output

```
*B:SRR# tools dump router ldp instance
LDP Instance for VR Id 1
  Create Time:                07/11/13 01:17:50.3486
```

Router Commands

```
Last Change:                07/11/13 01:34:19.3486
Last Up Time:               497 02:19:24.040
LDP LSR ID:                 110.20.1.2:0
Admin State:                Up
Oper State:                 Up
Oper Down Reason:          UP
Intf KA Timeout:           140
Intf KA Factor:             3
Intf Hello Timeout:        140
Intf Hello Factor:         3
Targ KA Timeout:           140
Targ KA Factor:             3
Targ Hello Timeout:        140
Targ Hello Factor:         3
Backoff Time:               15
Max Backoff:                120
Route Preference:          9
Tunnel Down Damp Time:     20
Label Withdrawal Delay:    0
Implicit Null:              disabled
Propagate IP TTL Local:    disabled
Propagate IP TTL Transit:  disabled
FRR:                        enabled
Mcast UP FRR:              enabled
Graceful Restart:          enabled
GR Max Recovery Time:      30
GR Neighbor Liveness Time: 5
Prefer tunnel-over-tunnel: yes
Aggr-Pre-Match Enabled:    yes
Aggr-Pre-Match Admin State:Up
P2MP Capable:              yes
MP MBB Capable:            yes
Dynamic Capability:        no
MP MBB Time:                3
Propagate FEC Policy:      GenSystem
Transport Address:          system
Targeted Sessions:         enabled
Down Event Count:          1
Num Sessions:               9          Num Entities:           13
Num Entities OLoad (FEC: Address Prefix ): Sent: 0          Rcvd: 0
Num Entities OLoad (FEC: PWE3 ): Sent: 0          Rcvd: 0
Num Entities OLoad (FEC: GENPWE3 ): Sent: 0          Rcvd: 0
Num Entities OLoad (FEC: P2MP ): Sent: 0          Rcvd: 0
Num Entities OLoad (FEC: MP2MP UP ): Sent: 0          Rcvd: 0
Num Entities OLoad (FEC: MP2MP DOWN ): Sent: 0          Rcvd: 0
Num Active Adjacencies:    24
Num Interfaces:            38          Num Active Interfaces: 38
Num OLoad Interfaces:      0
Num Targ Sessions:         12          Num Active Targ Sess: 11
Num OLoad Targ Sessions:   0
Num Addr FECs Rcvd:        9726          Num Addr FECs Sent:   9298
Num Addr Fecs OLoad:       0
Num Svc FECs Rcvd:         0          Num Svc FECs Sent:    0
Num Svc FECs OLoad:        0
Num mcast FECs Rcvd:       4023          Num Mcast FECs Sent: 600
Num mcast FECs OLoad:      0
Num MAC Flush Rcvd:        0          Num MAC Flush Sent:   0
Num MAC Flush Msg Dropped: 0
Num Egr Address Prefix FEC Stats: 0
Num Ingr Address Prefix FEC Stats: 0
Total Address Prefix FEC Stats: 4222
```

```

Num Egr PWE3          FEC Stats: 0
Num Ingr PWE3        FEC Stats: 0
Total PWE3           FEC Stats: 0
Num Egr GENPWE3     FEC Stats: 0
Num Ingr GENPWE3    FEC Stats: 0
Total GENPWE3       FEC Stats: 0
Num Egr P2MP        FEC Stats: 0
Num Ingr P2MP       FEC Stats: 0
Total P2MP          FEC Stats: 1800

```

LDP LM for VR Id 1 (handle 0x750c4fa4)

```

LSR ID:          110.20.1.2
Admin State:     Up
Oper State:      Up
Max ECMP:        32
Tun-down-damp time:20
Prefer tun-o-tun: yes
Aggregate Prefix: yes
FRR:             yes
Mcast UP FRR     yes
Label Adv Delay: 3
Label Adv Timer: 1
Label Wdraw Delay: 0
Label Wdraw Timer: 1
NHRES Timeout:   10
NHRES TimeoutTimer:1
Implicit Null:   no
Ldp Shortcut:    yes
Prop. IP TTL Lcl: no
Prop. IP TTL Trn: no
P2MP MBB Time:   3
Label Req Interval:10
Label Req Timer: 1
Label Clean Timer: 10
Pol Scan Timer:  1
Label Map Tx Int: 30 ticks
Addr Dist Int:   30 ticks
Ttm Msg Brpwise Int:50 ticks
Fec Cleanup Int: 30 ticks
Smgr Replay Timer: 1
Discovery Socket: 0
Listen Socket:   1273
SFec Cfg with If: 0
PW S-PE ID:      none
pendHelloAdjCnt  0
pendHelloAdjLimit 5000
pendConnReqCnt   0
pendConnReqLimit 5000
helloRxBufSize   704512
helloRxBufLimit  104857600
helloRxBufOverflow no
helloRxBufAuditReq no
  Link policy (0x750c795c)
    polHandle      : 0xf2d169e0
      Import Pol 1 : Import-LDP
      Export Pol 1 : Import-LDP
    inScanExport  : no
    reScanExport  : no
    inScanImport  : no
    reScanImport  : no
    nFlag         : no

```

Router Commands

```
TargImport policy (0x750c7b48)
polHandle      : 0xf2d16af8
inScanExport   : no
reScanExport   : no
inScanImport   : no
reScanImport   : no
nFlag          : no
TargExport policy (0x750c7d34)
polHandle      : 0xf2d16c10
inScanExport   : no
reScanExport   : no
inScanImport   : no
reScanImport   : no
nFlag          : no
AggrPreExcl policy (0x750c7f20)
polHandle      : 0xf2d16d28
inScanExport   : no
reScanExport   : no
inScanImport   : no
reScanImport   : no
nFlag          : no
Ttm policy (0x750c810c)
polHandle      : 0xf2d16e40
  Export Pol 1 : from-proto-bgp
inScanExport   : no
reScanExport   : yes
inScanImport   : no
reScanImport   : no
nFlag          : no
Num Active Address Prefix  FEC Stats: 1121
Num Active P2MP            FEC Stats: 1600
*B:SRR#
```

memory-usage

Syntax `memory-usage`

Context `tools>dump>router>ldp`

Description This command displays memory usage information for LDP.

Default none

session

Syntax `session [ip-address [:label space] [connection | peer | adjacency]`

Context `tools>dump>router>ldp`

Description This command displays information for an LDP session.

Default none

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

label-space — Specifies the label space identifier that the router is advertising on the interface.

connection — Displays connection information.

peer — Displays peer information.

adjacency — Displays hello adjacency information.

Sample Output

```
*B:SRR# tools dump router ldp session 110.20.1.1
Entity to 110.20.1.1:0:
Instance Information:
  MIB Key - Local: 110.20.1.2:0, Index: 1, Remote: 110.20.1.1:0
  Entity MIB key - VR: 1, Remote: 110.20.1.1:0
  Peer addr: 110.20.1.1 Local addr: 110.20.1.2
  Protocol Ver: 1 TCP port: 646 UDP port: 646
  Create Time:      000 00:09:35.990
  Session Type:     Link
  Distribution:     Downstream Unsolicited
  Retention:        Liberal Label
  Loop Detection:   None
  P2MP Capable:     No
  MP MBB Capability: No
  OverLoad Capability: No
  Dynamic Capability: No
  Address Prefix OverLoad Tx: No
  PWE3 OverLoad Tx: No
  GENPWE3 OverLoad Tx: No
  P2MP OverLoad Tx: No
  MP2MP UP OverLoad Tx: No
  MP2MP DOWN OverLoad Tx: No
  Address Prefix OverLoad Rx: No
  PWE3 OverLoad Rx: No
  GENPWE3 OverLoad Rx: No
  P2MP OverLoad Rx: No
  MP2MP UP OverLoad Rx: No
  MP2MP DOWN OverLoad Rx: No
  FEC 129 Cisco Interop: No
  Adv. Adj. Addr. Only : No
  Max PDU Size:      4096
  Negotiated KA Timeout: 140
  Local KA Timeout:  140
  Keepalive Factor:  3
  Peer GR Reconnect Timeout: 0s Recovery Timeout: 0s
  Entity Instance:   0 State: Inactive In GR: No
  Adv Addr Fec Over Targ: No
  Local Addresses   Sent      : 0
  Service FECs      Received : 0 Sent      : 0
  Address FECs      Received : 0 Sent      : 0
  Mcast FECs        Received : 0 Sent      : 0
  Adjacencies       Targeted  : 0 Link      : 2
  SDPs Active:      False
  Session Instance: 0
  Route Available:  True
  Buffer Send Queue: Empty
                   Curr Buffers : 0 Curr Bytes : 0
                   Max Buffers  : 0 Max Bytes  : 0
  MsgId (tcp, txbuf): 2 (0, 0)
  GR Audit On Hold: No
```

Router Commands

```
Addr Peer Exist: No
Cached Cfgd LSP Info: None
Cached Ecmp LSP Info: None

Connection Information:
  Create Time:      000 00:10:19.260
  Activation Time:  000 00:10:19.320
  TCP Info          Local: 110.20.1.2:57510  Remote: 110.20.1.1:646
  Connection state: Active
  Session state:   OpenSent
  Socket ID:       9373

NHRES Reg.   : yes
BFD Reg.     : no

*B:SRR#
```

sockets

Syntax sockets

Context tools>dump>router>ldp

Description This command displays information for all sockets being used by the LDP protocol.

Default none

timers

Syntax timers

Context tools>dump>router>ldp

Description This command displays timer information for LDP.

Default none

Sample Output

```
*A:Dut-A>config>router>ldp# \tools dump router ldp timers
Peer: 10.20.1.2:0
Type:      TargHello:  Timeout = 159 seconds. Expires in 43 seconds.
Type:      TargHelloTimeout: Timeout = 480 seconds. Expires in 370 seconds.
Type:      LinkHello(if 2):  Timeout = 4 seconds. Expires in 1 seconds.
Type:      LinkHelloTimeout: Timeout = 15 seconds. Expires in 11 seconds.
Type:      Keepalive:       Timeout = 9 seconds. Expires in 7 seconds.
Type:      KeepAlive Timeout: Timeout = 31 seconds. Expires in 27 seconds.
```

mpls

Syntax `mpls`

Context `tools>dump>router`

Description This command enables the context to display MPLS information.

Default none

ftn

Syntax `ftn`

Context `tools>dump>router>mpls`

Description This command displays FEC-to-NHLFE (FTN) dump information for MPLS. (NHLFE is the acronym for Next Hop Label Forwarding Entry.)

Default none

ilm

Syntax `ilm`

Context `tools>dump>router>mpls`

Description This command displays incoming label map (ILM) information for MPLS.

Default none

lspinfo

Syntax `lspinfo [lsp-name] [detail]`

Context `tools>dump>router>mpls`

Description This command displays label-switched path (LSP) information for MPLS.

Default none

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

detail — Displays detailed information about the LSP.

memory-usage

Syntax `memory-usage`

Context `tools>dump>router>mpls`

Router Commands

Description This command displays memory usage information for MPLS.

Default none

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

```

tp-tunnel

Syntax `tp-tunnel lsp-name [clear]`
`no tp-tunnel id tunnel-id [clear]`

Context tools>dump>router>mpls

Parameters *lsp-name* — Specifies the LSP name, up to 32 characters max
tunnel-id — Specifies the tunnel ID.

Values 1 — 61440

clear — Using clear will clear the statistics after reading.

Sample Output

```

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

```

```

Idx: 1-32 (Up/Up): pgId 4, paths 2, operChg 1, Active: Protect
TunnelId: 42::0.0.3.233::32-42::0.0.3.234::32
PgState: Dn, Cnt/Tm: Dn 1/000 04:00:48.160 Up:3/000 00:01:25.840
MplsMsg: tpDn 0/000 00:00:00.000, tunDn 0/000 00:00:00.000
wpDn 0/000 00:00:00.000, ppDn 0/000 00:00:00.000
wpDel 0/000 00:00:00.000, ppDel 0/000 00:00:00.000
tunUp 1/000 00:00:02.070

```

Router Commands

```

Paths:
Work (Up/Dn): Lsp 1, Lbl 32/32, If 2/128 (1/2/3 : 0.0.0.0)
  Tmpl: ptc: , oam: privatebed-oam-template (bfd: privatebed-bfd-template(np)-10 ms)
  Bfd: Mode CC state Dn/Up handle 160005/0
  Bfd-CC (Cnt/Tm): Dn 1/000 04:00:48.160 Up:1/000 00:01:23.970
  State: Admin Up (1::1:1) port Up , if Dn , operChg 2
  DnReasons: ccFault ifDn

Protect (Up/Up): Lsp 2, Lbl 2080/2080, If 3/127 (5/1/1 : 0.0.0.0)
  Tmpl: ptc: privatebed-protection-template, oam: privatebed-oam-template (bfd: pri-
vatebed-bfd-template(np)-10 ms)
  Bfd: Mode CC state Up/Up handle 160006/0
  Bfd-CC (Cnt/Tm): Dn 0/000 00:00:00.000 Up:1/000 00:01:25.410
  State: Admin Up (1::1:1) port Up , if Up , operChg 1

Aps: Rx - 5, raw 3616, nok 0(), txRaw - 3636, revert Y
  Pdu: Rx - 0x1a-21::0101 (SF), Tx - 0x1a-21::0101 (SF)
  State: PF:W:L LastEvt pdu (L-SFw/R-SFw)
  Tmrs: slow
  Defects: None Now: 000 05:02:19.130

Seq  Event      state      TxPdu      RxPdu      Dir      Act      Time
===  =====  =====  =====  =====  =====  =====  =====
000  start      UA:P:L      SF (0,0)    NR (0,0)    Tx-->    Work    000 00:00:02.080
001  pdu        UA:P:L      SF (0,0)    SF (0,0)    Rx<--    Work    000 00:01:24.860
002  pdu        UA:P:L      SF (0,0)    NR (0,0)    Rx<--    Work    000 00:01:26.860
003  pUp        NR          NR (0,0)    NR (0,0)    Tx-->    Work    000 00:01:27.440
004  pdu        NR          NR (0,0)    NR (0,0)    Rx<--    Work    000 00:01:28.760
005  wDn        PF:W:L      SF (1,1)    NR (0,0)    Tx-->    Prot    000 04:00:48.160
006  pdu        PF:W:L      SF (1,1)    NR (0,1)    Rx<--    Prot    000 04:00:48.160
007  pdu        PF:W:L      SF (1,1)    SF (1,1)    Rx<--    Prot    000 04:00:51.080

```

free-tunnel-id

Syntax `free-tunnel-id start-range end-range`

Context `tools>dump>router>mpls`

Description This command shows the free MPLS tunnel IDs available between two values, *start-range* and *end-range*.

ospf

Syntax `ospf [ospf-instance]`

Context `tools>dump>router`

Description This command enables the context to display tools information for OSPF.

Default none

Parameters `ospf-instance` — OSPF instance.

Values 1 — 4294967295

ospf3

Syntax	ospf3
Context	tools>dump>router
Description	This command enables the context to display tools information for OSPF3.
Default	none

abr

Syntax	abr [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays area border router (ABR) information for OSPF.
Default	none
Parameters	detail — Displays detailed information about the ABR.

asbr

Syntax	asbr [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays autonomous system border router (ASBR) information for OSPF.
Default	none
Parameters	detail — Displays detailed information about the ASBR.

bad-packet

Syntax	bad-packet [interface-name]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays information about bad packets for OSPF.
Default	none
Parameters	<i>interface-name</i> — Display only the bad packets identified by this interface name.

leaked-routes

Syntax	leaked-routes [summary detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays information about leaked routes for OSPF.
Default	summary
Parameters	summary — Display a summary of information about leaked routes for OSPF. detail — Display detailed information about leaked routes for OSPF.

memory-usage

Syntax	memory-usage [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays memory usage information for OSPF.
Default	none
Parameters	detail — Displays detailed information about memory usage for OSPF.

request-list

Syntax	request-list [neighbor <i>ip-address</i>] [detail] request-list virtual-neighbor <i>ip-address</i> <i>area-id</i> <i>area-id</i> [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays request list information for OSPF.
Default	none
Parameters	neighbor <i>ip-address</i> — Display neighbor information only for neighbor identified by the IP address. detail — Displays detailed information about the neighbor. virtual-neighbor <i>ip-address</i> — Displays information about the virtual neighbor identified by the IP address. area-id <i>area-id</i> — The OSPF area ID expressed in dotted decimal notation or as a 32-bit decimal integer.

retransmission-list

Syntax	retransmission-list [neighbor <i>ip-address</i>] [detail] retransmission-list virtual-neighbor <i>ip-address area-id area-id</i> [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays dump retransmission list information for OSPF.
Default	none
Parameters	neighbor <i>ip-address</i> — Display neighbor information only for neighbor identified by the IP address. <i>detail</i> — Displays detailed information about the neighbor. virtual-neighbor <i>ip-address</i> — Displays information about the virtual neighbor identified by the IP address. area-id <i>area-id</i> — The OSPF area ID expressed in dotted decimal notation or as a 32-bit decimal integer.

route-summary

Syntax	route-summary
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays dump route summary information for OSPF.
Default	none

route-table

Syntax	route-table [type] [detail]
Context	tools>dump>router>ospf tools>dump>router>ospf3
Description	This command displays dump information about routes learned through OSPF.
Default	none
Parameters	type — Specifies the type of route table to display information. Values intra-area, inter-area, external-1, external-2, nssa-1, nssa-2 detail — Displays detailed information about learned routes.

pim

Syntax	pim
Context	tools>dump>router

Router Commands

Description This command enables the context to display PIM information.

iom-failures

Syntax **iom-failures [detail]**

Context tools>dump>router>pim

Description This command displays information about failures in programming IOMs.

Parameters *detail* — Displays detailed information about IOM failures.

rsvp

Syntax rsvp

Context tools>dump>router

Description This command enables the context to display RSVP information.

Default none

psb

Syntax **psb [endpoint *endpoint-address*] [sender *sender-address*] [tunnelid *tunnel-id*] [lspid *lsp-id*]**

Context tools>dump>router>rsvp

Description This command displays path state block (PSB) information for RSVP.

When a PATH message arrives at an LSR, the LSR stores the label request in the local PSB for the LSP. If a label range is specified, the label allocation process must assign a label from that range.

The PSB contains the IP address of the previous hop, the session, the sender, and the TSPEC. This information is used to route the corresponding RESV message back to LSR 1.

Default none

Parameters **endpoint *endpoint-address*** — Specifies the IP address of the last hop.

sender *sender-address* — Specifies the IP address of the sender.

tunnelid *tunnel-id* — Specifies the SDP ID.

Values 0 — 4294967295

lspid *lsp-id* — Specifies the label switched path that is signaled for this entry.

Values 1 — 65535

rsb

Syntax	rsb [endpoint <i>endpoint-address</i>] [sender <i>sender-address</i>] [tunnelid <i>tunnel-id</i>] [lspid <i>lsp-id</i>]
Context	tools>dump>router>rsvp
Description	This command displays RSVP Reservation State Block (RSB) information.
Default	none
Parameters	<p>endpoint <i>endpoint-address</i> — Specifies the IP address of the last hop.</p> <p>sender <i>sender-address</i> — Specifies the IP address of the sender.</p> <p>tunnelid <i>tunnel-id</i> — Specifies the SDP ID.</p> <p>Values 0 — 4294967295</p> <p>lspid <i>lsp-id</i> — Specifies the label switched path that is signaled for this entry.</p> <p>Values 1 — 65535</p>

tcsb

Syntax	tcsb [endpoint <i>endpoint-address</i>] [sender <i>sender-address</i>] [tunnelid <i>tunnel-id</i>] [lspid <i>lsp-id</i>]
Context	tools>dump>router>rsvp
Description	This command displays RSVP traffic control state block (TCSB) information.
Default	none
Parameters	<p>endpoint <i>endpoint-address</i> — Specifies the IP address of the egress node for the tunnel supporting this session.</p> <p>sender <i>sender-address</i> — Specifies the IP address of the sender node for the tunnel supporting this session. It is derived from the source address of the associated MPLS LSP definition.</p> <p>tunnelid <i>tunnel-id</i> — Specifies the IP address of the ingress node of the tunnel supporting this RSVP session.</p> <p>Values 0 — 4294967295</p> <p>lspid <i>lsp-id</i> — Specifies the label switched path that is signaled for this entry.</p> <p>Values 1 — 65535</p>

static-route

Syntax	static-route ldp-sync-status
Context	tools>dump>router
Description	This command displays the sync status of LDP interfaces that static-route keeps track of.

web-rd

Router Commands

Syntax **web-rd**

Context tools>dump>router

Description This command enables the context to display tools for web redirection.

http-client

Syntax **http-client** [*ip-prefix/mask*]

Context tools>dump>router>web-rd

Description This command displays the HTTP client hash table.

Parameters *ip-prefix/mask* — Specifies the IP prefix and host bits.

Values	host bits:	must be 0
	mask:	0 — 32

Performance Tools

perform

Syntax perform

Context tools

Description This command enables the context to enable tools to perform specific tasks.

Default none

manual-export

Syntax manual-export

Context tools>perform>cflowd

Description This command triggers a manual export operation. It must be executed to trigger a manual cflowd export operation when the cflowd export mode is set to manual using the **config>cflowd>export-mode** command.

Default none

cron

Syntax cron

Context tools>perform

Description This command enables the context to perform CRON (scheduling) control operations.

Default none

action

Syntax action

Context tools>perform>cron

Description This command enables the context to stop the execution of a script started by CRON action. See the **stop** command.

stop

Syntax stop [*action-name*] [*owner action-owner*] [*all*]

Performance Tools

Context tools>perform>cron>action

Description This command stops execution of a script started by CRON action.

Parameters *action-name* — Specifies the action name.

Values Maximum 32 characters.

owner *action-owner* — Specifies the owner name.

Default TiMOS CLI

all — Specifies to stop all CRON scripts.

tod

Syntax **tod**

Context tools>perform>cron

Description This command enables the context for tools for controlling time-of-day actions.

Default none

re-evaluate

Syntax **re-evaluate**

Context tools>perform>cron>tod

Description This command enables the context to re-evaluate the time-of-day state.

Default none

customer

Syntax **customer** *customer-id* [**site** *customer-site-name*]

Context tools>perform>cron>tod>re-eval

Description This command re-evaluates the time-of-day state of a multi-service site.

Parameters *customer-id* — Specifies an existing customer ID.

Values 1 — 2147483647

site *customer-site-name* — Specifies an existing customer site name.

filter

Syntax **filter** *filter-type* [*filter-id*]

Context tools>perform>cron>tod>re-eval

Description This command re-evaluates the time-of-day state of a filter entry.

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

Values ip-filter, ipv6-filter, mac-filter

filter-id — Specifies an existing filter ID.

Values 1 — 65535

service

Syntax **service id** *service-id* [**sap** *sap-id*]

Context tools>perform>cron>tod>re-eval

Description This command re-evaluates the time-of-day state of a SAP.

Parameters *id service-id* — Specifies the an existing service ID.

Values 1 — 2147483647

sap *sap-id* — Specifies the physical port identifier portion of the SAP definition. See [Common CLI Command Descriptions on page 639](#) for CLI command syntax.

tod-suite

Syntax **tod-suite** *tod-suite-name*

Context tools>perform>cron>tod>re-eval

Description This command re-evaluates the time-of-day state for the objects referring to a tod-suite.

Parameters *tod-suite-name* — Specifies an existing TOD nfname.

aps

Syntax **aps**

Context tools>perform

Description This command enables the context to perform Automated Protection Switching (APS) operations.

clear

Syntax **clear** *aps-id* {**protect** | **working**}

Performance Tools

Context tools>perform>aps

Description This command removes all Automated Protection Switching (APS) operational commands.

Parameters *aps-id* — This option clears a specific APS on un-bundled SONET/SDH ports.
protect — This command clears a physical port that is acting as the protection circuit for the APS group.
working — This command clears a physical port that is acting as the working circuit for this APS group.

exercise

Syntax **exercise** *aps-id* {**protect** | **working**}

Context tools>perform

Description This command performs an exercise request on the protection or working circuit.

Parameters *aps-id* — This option clears a specific APS on un-bundled SONET/SDH ports.
protect — This command performs an exercise request on the port that is acting as the protection circuit for the APS group.
working — This command performs an exercise request on the port that is acting as the working circuit for this APS group.

force

Syntax **force** *aps-id* {**protect** | **working**}

Context tools>perform

Description This command forces a switch to either the protect or working circuit

Parameters *aps-id* — This option clears a specific APS on un-bundled SONET/SDH ports.
protect — This command clears a physical port that is acting as the protection circuit for the APS group.
working — This command clears a physical port that is acting as the working circuit for this APS group.

lockout

Syntax **lockout** *aps-id*

Context tools>perform

Description This command locks out the protection circuit.

Parameters *aps-id* — Automated Protection Switching ID
Values 1 — 64

request

Syntax `request aps-id {protect | working}`

Context `tools>perform`

Description This command requests a manual switch to protection or working circuit.

Parameters *aps-id* — This option clears a specific APS on un-bundled SONET/SDH ports.

protect — This command requests a manual switch to a port that is acting as the protection circuit for the APS group.

working — This command requests a manual switch to a port that is acting as the working circuit for this APS group.

consistency

Syntax `consistency`

Context `tools>perform>router`

Description This command performs route table manager (RTM) consistency checks.

Default `none`

ldp-sync-exit

Syntax `[no] ldp-sync-exit`

Context `tools>perform>router>isis`
`tools>perform>router>ospf`

Description This command restores the actual cost of an interface at any time. When this command is executed, IGP immediately advertises the actual value of the link cost for all interfaces which have the IGP-LDP synchronization enabled if the currently advertised cost is different.

isis

Syntax `isis`

Context `tools>perform>router`

Description This command enables the context to configure tools to perform certain ISIS tasks.

run-manual-spf

Syntax `run-manual-spf`

Performance Tools

Context tools>perform>router>isis

Description This command runs the Shortest Path First (SPF) algorithm.

mcac

Syntax mcac

Context tools>perform>router

Description This command enables the context to configure tools to perform certain Multicast CAC tasks.

recalc

Syntax recalc policy *policy-name* [**bundle** *bundle-name*] **protocol** {igmp|pim} **interface** *interface-name*

Context tools>perform>router

Description This command specifies to recalculate and apply the operational values to the specified command parameters.

Default none

Parameters **policy** *policy-name* — Specifies the name of the multicast CAC policy.

bundle *bundle-name* — Specifies the name of the multicast CAC policy bundle.

protocol igmp — Specifies the values used to identify multicast CAC policy applications.

protocol pim — Specifies the values used to identify multicast CAC policy applications.

interface *interface-name* — Specifies the router interface name.

l2tp

Syntax l2tp

Context tools>perform>router

Description This command enables the context to configure tools for L2TP.

Default none

group

Syntax group *tunnel-group-name*

Context tools>perform>router>l2tp

Description This command specifies a valid string to identify a Layer Two Tunneling Protocol Tunnel Group.

Default none

Parameters *tunnel-group-name* — Specifies a tunnel group name.

drain

Syntax [no] drain

Context
 tools>perform>router>l2tp>group
 tools>perform>router>l2tp>group>tunnel
 tools>perform>router>l2tp>peer
 tools>perform>router>l2tp>tunnel

Description This command triggers an attempt to drain this L2TP group, peer, session or tunnel. The **no** form of the command drops the draining.

Default none

start

Syntax start

Context tools>perform>router>l2tp>group>tunnel

Description This command triggers an attempt to drain this L2TP group, peer, session or tunnel.

stop

Syntax stop

Context
 tools>perform>router>l2tp>group
 tools>perform>router>l2tp>group>tunnel
 tools>perform>router>l2tp>peer
 tools>perform>router>l2tp>tunnel

Description This command triggers an attempt to stop the control connection for this L2TP group, peer, session or tunnel.

tunnel

Syntax tunnel *tunnel-name*

Context tools>perform>router>l2tp>group

Description This command specifies a valid string to identify a Layer Two Tunneling Protocol Tunnel.

Default none

Parameters *tunnel-name* — Specifies an existing tunnel group name.

tunnel

Syntax	tunnel <i>connection-id</i>
Context	tools>perform>router>l2tp
Description	This command configures tools for an operational tunnel.
Default	none
Parameters	<i>connection-id</i> — Specifies the connection ID of the L2TP session associated with this session. Values 1 — 4294967295

mpls

Syntax	mpls
Context	tools>perform>router
Description	This command enables the context to perform specific MPLS tasks.
Default	none

adjust-autobandwidth

Syntax	adjust-autobandwidth [lsp <i>lsp-name</i> [force [bandwidth <i>mbps</i>]]]
Context	tools>perform>router>mpls
Description	This command initiates an immediate auto-bandwidth adjustment attempt for either one specific LSP or all active LSPs. If an LSP is not specified then the system assumes the command applies to all LSPs. The adjust-count, maximum average data rate and overflow count are not reset by the manual auto-bandwidth command, whether or not the bandwidth adjustment succeeds or fails.
Parameters	lsp <i>lsp-name</i> — Specifies the name that identifies the LSP. The LSP name can be up to 32 characters long and must be unique. force — 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. bandwidth <i>mbps</i> — 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.

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* — Specifies the destination IP address.
- from** *ip-addr* — Specifies 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 an IP address to exclude from the operation.
- use-te-metric** — Specifies whether the TE metric would be used for the purpose of the LSP path computation by CSPF.
- skip-interface** *interface-name* — Specifies a local interface name, instead of the interface address, to be excluded from the CSPF computation.
- ds-class-type** *class-type* — Specifies the class type.

Values 0 — 7
- cspf-reqtype** *req-typ* — Specifies the CSPF request type.

Values all — Specifies all ECMP paths.
random — Specifies random ECMP paths.
least-fill — Specifies minimum fill path.

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 Use this command to resignal a specific LSP path.

Default none

Performance Tools

- Parameters**
- lsp** *lsp-name* — Specifies the name that identifies the LSP. The LSP name can be up to 32 characters long and must be unique.
 - path** *path-name* — Specifies the name for the LSP path up, to 32 characters in length.
 - delay** *minutes* — Specifies the resignal delay in minutes.
Values 0 — 30
 - 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

trap-suppress

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

Context tools>perform>router>mpls

Description This command modifies thresholds for trap suppression.

Default none

Parameters *number-of-traps* — Specifies the number of traps in multiples of 100. An error message is generated if an invalid value is entered.

Values 100 to 1000

time-interval — Specifies the timer interval in seconds.

Values 1 — 300

tp-tunnel

Syntax **tp-tunnel**

Context tools>perform>router>mpls

Description This command enables the context to perform Linear Protection operations on an MPLS-TP LSP.

clear

Syntax **clear** {*lsp-name* | **id** *tunnel-id*}

Context tools>perform>router>mpls>tp-tunnel

Description Clears all the MPLS-TP linear protection operational commands for the specified LSP that are currently active.

Parameters *lsp-name* — Specifies the name of the MPLS-TP LSP.
Values up to 32 characters in text
id tunnel-id — Specifies the tunnel number of the MPLS-TP LSP
Values 1 — 61440

force

Syntax **force** *{lsp-name | id tunnel-id}*
Context tools>perform>router>mpls>tp-tunnel
Description Performs a force switchover of the MPLS-TP LSP from the active path to the protect path.
Parameters *lsp-name* — Specifies the name of the MPLS-TP LSP.
Values up to 32 characters in text
id tunnel-id — Specifies the tunnel number of the MPLS-TP LSP
Values 1 — 61440

manual

Syntax **manual** *{lsp-name | id tunnel-id}*
Context tools>perform>router>mpls>tp-tunnel
Description Performs a manual switchover of the MPLS-TP LSP from the active path to the protect path.
Parameters *lsp-name* — Specifies the name of the MPLS-TP LSP.
Values up to 32 characters in text
id tunnel-id — Specifies the tunnel number of the MPLS-TP LSP
Values 1 — 61440

lockout

Syntax **lockout** *{lsp-name | id tunnel-id}*
Context tools>perform>router>mpls>tp-tunnel
Description Performs a lockout of protection for an MPLS-TP LSP. This prevents a switchover to the protect path.
Parameters *lsp-name* — Specifies the name of the MPLS-TP LSP.
Values up to 32 characters in text
id tunnel-id — Specifies the tunnel number of the MPLS-TP LSP
Values 1 — 61440

ospf

Syntax	ospf
Context	tools>perform>router
Description	This command enables the context to perform specific OSPF tasks.
Default	none

ospf3

Syntax	ospf3
Context	tools>perform>router
Description	This command enables the context to perform specific OSPF3 tasks.
Default	none

refresh-lsas

Syntax	refresh-lsas [<i>lsa-type</i>] [<i>area-id</i>]
Context	tools>perform>router>ospf tools>perform>router>ospf3
Description	This command refreshes LSAs for OSPF.
Default	none
Parameters	<i>lsa-type</i> — Specifies the LSA type using allow keywords. Values router, network, summary, asbr, extern, nssa, opaque <i>area-id</i> — The OSPF area ID expressed in dotted decimal notation or as a 32-bit decimal integer. Values 0 — 4294967295

run-manual-spf

Syntax	run-manual-spf <i>externals-only</i>
Context	tools>perform>router>ospf tools>perform>router>ospf3
Description	This command runs the Shortest Path First (SPF) algorithm.
Default	none
Parameters	externals-only — Specifies the route preference for OSPF external routes.

security

Syntax security

Context tools>perform

Description This command provides tools for testing security.

authentication-server-check

Syntax authentication-server-check *server-address ip-address* [**port** *port*] { {**user-name** *DHCP client user name* **password** *password* } | **attr-from-file** *file-url* } **secret** *key* [**source-address** *ip-address*] [**timeout** *seconds*] [**router** *router-instance* | **service-name** *service-name*]

Context tools>perform>security

Description This command checks connection to the RADIUS server.

Parameters *port* — Configures the TCP port number used to contact the RADIUS server. Default port 1812 is used, as specified in RFC 2865.

Values 1..65535

user-name — Specifies the user name to be authenticated.

Values 253 characters maximum

password — Specifies the password for the user.

Values 64 characters maximum

key — The secret key to access the RADIUS server. This key must match the password on the RADIUS server.

Values 20 characters maximum

ip-address — The IP address of the RADIUS server.

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

seconds — Configures the number of seconds the router waits for a response from a RADIUS server.

Values 1..90

router *router-instance* — Specifies the router name or service ID. Default base router.

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

Default Base

service-name — Specifies the service name/Id that is used to reach the RADIUS server.

Values 64 characters maximum

Performance Tools

attr-from-file *file-url* — Specifies the location of the file (remote or local), attribute file to be used for authentication of users and password.

Values	<i>local-url:</i> [<i>cflash-id</i>] [<i>file-path</i>] 200 characters maximum, including cflash-id directory length maximum 99 characters each
	<i>remote-url:</i> [{ftp:// tftp://} <login>:<pswd>@<remote-locn>/][<file-path>] 255 characters maximum, directory length maximum 99 characters each
	<i>remote-locn:</i> [<hostname> <ipv4-address> <ipv6-address>]
	<i>ipv4-address:</i> a.b.c.d
	<i>ipv6-address:</i> x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x - [0..FFFF]H d - [0..255]D interface - 32 chars max, for link local addresses
	<i>cflash-id:</i> cf1: cf1-A: cf1-B: cf2: cf2-A: cf2-B: cf3: cf3-A: cf3-B:

service

Syntax **services**

Context tools>perform

Description This command enables the context to configure tools for services.

egress-multicast-group

Syntax **egress-multicast-group** *group-name*

Context tools>perform>service

Description This command enables the context to configure tools for egress multicast groups.

Parameters *group-name* — Specifies an existing group name.

force-optimize

Syntax **force-optimize**

Context tools>perform>service>egress-multicast-group

Description This command optimizes the chain length.

eval-pw-template

Syntax **eval-pw-template** *policy-id* [**allow-service-impact**]

Context tools>perform>service>egress-multicast-group
tools>perform>service>id

Description This command re-evaluates the pseudowire template policy.

Parameters *policy-id* — Specifies the pseudowire template policy.

id

Syntax id *service-id*

Context tools>perform>service

Description This command enables the context to configure tools for a specific service.

Parameters *service-id* — Specifies an existing service ID.

Values 1 — 2147483647

endpoint

Syntax endpoint *endpoint-name*

Context tools>perform>service>id

Description This command enables the context to configure tools for a specific VLL service endpoint.

Parameters *endpoint-name* — Specifies an existing VLL service endpoint name.

force-switchover

Syntax force-switchover *sdp-id:vc-id*
no force-switchover
force-switchover spoke-sdp-fec [1..4294967295]

Context tools>perform>service>id

Description This command forces a switch of the active spoke SDP for the specified service.

Parameters *sdp-id:vc-id* — Specifies an existing spoke SDP for the service.

spoke-sdp-fec *spoke-sdp-fec-id* — The spoke-sdp-fec-id for a FEC129 AII Type 2 spoke-sdp. This parameter is mutually exclusive with sdp:vc-id used for a FEC 128 spoke-sdp.

Sample Output

```
A:Dut-B# tools perform service id 1 endpoint mcep-t1 force-switchover 221:1
*A:Dut-B# show service id 1 endpoint
```

```
=====
Service 1 endpoints
=====
```

Performance Tools

```
Endpoint name           : mcep-t1
Description             : (Not Specified)
Revert time            : 0
Act Hold Delay         : 0
Ignore Standby Signaling : false
Suppress Standby Signaling : false
Block On Mesh Fail     : true
Multi-Chassis Endpoint : 1
MC Endpoint Peer Addr  : 3.1.1.3
Psv Mode Active        : No
Tx Active              : 221:1(forced)
Tx Active Up Time      : 0d 00:00:17
Revert Time Count Down : N/A
Tx Active Change Count : 6
Last Tx Active Change  : 02/14/2009 00:17:32
```

Members

```
Spoke-sdp: 221:1 Prec:1           Oper Status: Up
Spoke-sdp: 231:1 Prec:2           Oper Status: Up
```

*A:Dut-B#

mcac

Syntax **mcac sap** *sap-id* **recalc policy** *policy-name* [**bundle** *bundle-name*]
mcac sdp *sdp-id:vc-id* **recalc policy** *policy-name* [**bundle** *bundle-name*]

Context tools>perform>service>id

Description This command enables too for a multicast CAC.

Parameters **sap** *sap-id* — Specifies the SAP ID.
recalc — keyword
policy *policy-name* — Specifies the policy name.
bundle *bundle-name* — Specifies the bundle name.

pw-routing

Syntax **pw-routing**

spoke-sdp-fec-release

Syntax **spoke-sdp-fec-release** *global-id[:prefix[:ac-id]]*

subscriber-mgmt

Syntax **subscriber-mgmt**

Context tools>perform

Description This command enables tools to control subscriber management.

edit-lease-state

Syntax **edit-lease-state sap sap-id ip ip-address [subscriber sub-ident-string] [sub-profile-string sub-profile-string] [sla-profile-string sla-profile-string]**
edit-lease-state svc-id service-id ip ip-address [subscriber sub-ident-string] [sub-profile-string sub-profile-string] [sla-profile-string sla-profile-string]

Context tools>perform>subscr-mgmt

Parameters **sap sap-id** — Specifies the physical port identifier portion of the SAP definition. See [Common CLI Command Descriptions on page 639](#) for CLI command syntax.

ip ip-address — Modifies lease state information for the specified IP address.

subscriber sub-ident-string — Modifies lease state information for the specified subscriber ID.

sub-profile-string sub-profile-string — Modifies lease state information for the specified subscriber profile.

sla-profile-string sla-profile-string — Modifies lease state information for the SLA profile.

svc-id service-id — Modifies lease state information for the specified service ID.

Values 1 — 2147483647

eval-lease-state

Syntax **eval-lease-state [svc-id service-id] [sap sap-id] [subscriber sub-ident-string] [ip ip-address]**

Context tools>perform>subscr-mgmt

Description This command evaluates lease state information.

Parameters **svc-id service-id** — Evaluates lease state information for the specified service.

Values 1 — 2147483647

sap sap-id — Evaluates lease state information for the specified SAP. See [Common CLI Command Descriptions on page 639](#) for CLI command syntax.

subscriber sub-ident-string — Evaluates lease state information for the specified subscriber identification string.

ip ip-address — Evaluates lease state information for the specified IP address.

forcerenew

Performance Tools

Syntax **forcerenew** **svc-id** *service-id* {**ip** *ip-address*[/*mask*] | **mac** *ieee-address*}
forcerenew {**interface** *interface-name* | **sap** *sap-id* | **sdp** *sdp-id:vc-id*} [**ip** *ip-address*[/*mask*] | **mac** *ieee-address*]

Context tools>perform>subscr-mgmt

Description This command forces the renewal of lease state.

Parameters **svc-id** *service-id* — Forces renewal of the lease state for the specified service.

Values 1 — 2147483647

sap *sap-id* — Forces renewal of the lease state for the specified SAP. See [Common CLI Command Descriptions on page 639](#) for CLI command syntax.

ip *ip-address* — Forces renewal of the lease state for the specified IP address.

mac *ieee-address* — Forces renewal of the lease state for the specified MAC address.

interface *interface-name* — Forces renewal of the lease state for the specified interface name.

re-ident-sub

Syntax **re-ident-sub** *old-sub-ident-string* **to** *new-sub-ident-string*

Context tools>perform>subscr-mgmt

Description This command renames a subscriber identification string.

Parameters *old-sub-ident-string* — Specifies the existing subscriber identification string to be renamed.

new-sub-ident-string — Specifies the new subscriber identification string name.

remap-lease-state

Syntax **remap-lease-state** **old-mac** *ieee-address* **mac** *ieee-address*
remap-lease-state **sap** *sap-id* [**mac** *ieee-address*]

Context tools>perform>subscr-mgmt

Description This command allows the remapping of all existing hosts if network card on CMTS/WAC side is changed is required.

When this command is executed, the following restrictions apply

- When **sap** is taken, all leases associated with the SAP are re-written.
 - For a SAP with a configured MAC in "lease-populate" command, this MAC will be taken.
 - For a SAP without a configured MAC the MAC from tools command will be taken.
 - For a SAP without a configured MAC and no MAC in tools command no action will be perform.
- When using the **old-mac** option, providing a new MAC *ieee-address* is mandatory.

This command is applicable only when dealing with DHCP lease states which were instantiated using l2header mode of DHCP operation.

Parameters **old-mac** *ieee-address*

old-mac *ieee-address* — Specifies the old MAC address to remap.

mac *ieee-address* — Specifies that the provisioned MAC address will be used in the anti-spoofing entries for this SAP when I2-header is enabled. The parameter may be changed mid-session. Existing sessions will not be re-programmed unless a **tools perform** command is issued for the lease.

sap *sap-id* — Specifies the physical port identifier portion of the SAP definition. See [Common CLI Command Descriptions on page 639](#) for CLI command syntax.

When configured, the SAP parameter will remap all MAC addresses of DHCP lease states on the specified SAP. When no optional MAC parameter is specified, the **sap** *sap-id* command remaps all MAC addresses of lease states towards the MAC address specified in the I2-header configuration.

redundancy

Syntax **redundancy**

Context tools>perform

Description This command enables the context to configure redundancy parameters.

forced-single-sfm-overload

Syntax **[no] forced-single-sfm-overload**

Context tools>perform>redundancy

Description This command forces enabling the single-sfm-overload state.
The no form of the command disables the single-sfm-overload state.

issu-post-process

Syntax **issu-post-process**

Context tools>perform>redundancy

Description This command forces the MPLS module to exit the maintenance mode, and thus resume signaling new LSP paths, before major or minor ISSU is completed.

When the system starts major or minor ISSU procedures, MPLS will automatically be put into a maintenance mode such that existing LSP paths will continue to operate normally while the node will not issue new LSP paths or a Make-Before-Break (MBB) path for existing LSPs. It will also reject requests for new LSP paths or MBB paths of existing LSPs coming from RSVP neighbors.

The MPLS module will automatically exit the new maintenance mode when the major or minor ISSU is completed. As such this command **MUST** only be used if the user encounters MPLS issues during the ISSU process.

multi-chassis

Syntax **multi-chassis**

Context tools>perform>redundancy

Description This command provides the context to configure multi-chassis redundancy.

mc-ipsec

Syntax **mc-ipsec**

Context tools>perform>redundancy>multi-chassis

Description This command provides tools to configure multi-chassis redundancy IPsec.

force-switchover

Syntax **force-switchover tunnel-group** *local-group-id* [**now**] [**to** {**master|standby**}]

Context tools>perform>redundancy>multi-chassis>mc-ipsec

Description This command enables a manual switchover mc-ipsec mastership.

sync-database-reconcile

Syntax **sync-database-reconcile** [**peer** *ip-address*] [**port** *port-id|lag-id* [**sync-tag** *sync-tag*]] [**application** *application*]

Context tools>perform>redundancy>multi-chassis

Description This command reconciles MCS database entries