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## Tools Configuration Commands

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### 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.

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## Dump Commands

### dump

<b>Syntax</b>	<b>dump</b> <i>router-name</i>
<b>Context</b>	tools
<b>Description</b>	The context to display information for debugging purposes.
<b>Default</b>	none
<b>Parameters</b>	<i>router-name</i> — Specify a router name, up to 32 characters in length.
	<b>Default</b> Base

### aps

<b>Syntax</b>	<b>aps</b> <i>aps-id</i> [ <b>clear</b> ] <b>aps mc-aps-signaling</b> [ <b>clear</b> ] <b>aps mc-aps-ppp</b> [ <b>clear</b> ]
<b>Context</b>	tools>dump>aps
<b>Description</b>	This command displays Automated Protection Switching (APS) information.
<b>Parameters</b>	<b>clear</b> — Removes all Automated Protection Switching (APS) operational commands. <b>mc-aps-signaling</b> — Displays multi-chassis APS signaling information. <b>mc-aps-ppp</b> — 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

```

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```
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* — Specify an existing LAG id.

**Values** 1 — 200 (7750 SR-1: 1 — 64)

```
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* —

**router** *router-instance* —

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

**outside-port** [1..65535] —

## 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* —

<b>Values</b>	<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]`

**Context** `tools>dump>nat`

**Description** This command displays NAT session information.

**Parameters**

- `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` —

## 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`

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**Description** This command displays subscriber management persistence information.

### 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#
```

### 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.

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

<b>Values</b>	dhcp-server:	local dhcp server
	igmp:	Internet group management protocol
	igmp-snooping:	igmp-snooping
	mc-ring:	multi-chassis ring
	mld-snooping:	multicast listener discovery-snooping
	srrp:	simple router redundancy protocol
	sub-host-trk:	subscriber host tracking
	sub-mgmt:	subscriber management

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

<b>Values</b>	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* — Specify the port ID.

<b>Values</b>	<i>port-id</i>	<i>slot/mda/port[.channel]</i>
	bundle-id:	<i>bundle-type-slot/mda.bundle-num</i>
	bundle:	keyword
	type:	ppp
	bundle-num:	1 — 256
	bpgrp-id:	<i>bpgrp-type-bpgrp-num</i>
	bpgrp:	keyword
	type:	ppp
	bpgrp-num:	1 — 1280
	aps-id:	<i>aps-group-id[.channel]</i>
	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   : bpgrp-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* — Specify 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      | Occurrence   | 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      | Occurrence   | 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 :

```

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```
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

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

### dhcp

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

### group-if-mapping

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

### group-if-stats

<b>Syntax</b>	<b>group-if-stats</b> [clear]
<b>Context</b>	tools>dump>router>dhcp
<b>Description</b>	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* — Specify an existing LAG id.
- Values** 1 — 200 (7750 SR-1: 1 — 64)

## 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* — Specify an existing LAG id.
- Values** 1 — 200 (7750 SR-1: 1 — 64)

## 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

## interface

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

## peer

- Syntax** `peer ip-address`
- Context** `tools>dump>router>ldp`
- Description** This command displays information for an LDP peer.
- Default** none
- Parameters** *ip-address* — 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 prefix [ip-prefix/mask]`  
**fec vc-type** {`ethernet` | `vlan`} **vc-id** `vc-id`

**Context** `tools>dump>router>ldp`

**Description** This command displays information for an LDP FEC.

**Default** none

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

<b>Values</b>	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-mps*.

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

`vc-id` — Specifies the virtual circuit identifier.

<b>Values</b>	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
  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
```

## Router Commands

```
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 OLoad:      0
Num Addr FECs Sent:       9298
Num Svc FECs Rcvd:        0
Num Svc FECs OLoad:       0
Num Svc FECs Sent:        0
Num mcast FECs Rcvd:      4023
Num mcast FECs OLoad:     0
Num Mcast FECs Sent:      600
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 Brpws 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
  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

```

## Router Commands

```
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
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

```

## Router Commands

```
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

**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
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)

```

## Router Commands

```
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  RxDpu  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

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

## asbr

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

## bad-packet

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

## leaked-routes

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

## Router Commands

**detail** — Display detailed information about leaked routes for OSPF.

### memory-usage

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

### request-list

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

### retransmission-list

<b>Syntax</b>	<b>retransmission-list [neighbor <i>ip-address</i>] [detail]</b> <b>retransmission-list virtual-neighbor <i>ip-address area-id area-id</i> [detail]</b>
<b>Context</b>	tools>dump>router>ospf tools>dump>router>ospf3
<b>Description</b>	This command displays dump retransmission list information for OSPF.
<b>Default</b>	none
<b>Parameters</b>	<b>neighbor <i>ip-address</i></b> — Display neighbor information only for neighbor identified by the IP address. <b>detail</b> — Displays detailed information about the neighbor.

**virtual-neighbor** *ip-address* — Displays information about the virtual neighbor identified by the IP address.

**area-id** *area-id* — 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** — Specify 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

**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.

## Router Commands

### rsvp

<b>Syntax</b>	rsvp
<b>Context</b>	tools>dump>router
<b>Description</b>	This command enables the context to display RSVP information.
<b>Default</b>	none

### psb

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

### rsb

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

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

**Values** 1 — 65535

## tcsb

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

**Context** tools>dump>router>rsvp

**Description** This command displays RSVP traffic control state block (TCSB) information.

**Default** none

**Parameters** **endpoint** *endpoint-address* — Specifies the IP address of the egress node for the tunnel supporting this session.

**sender** *sender-address* — 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.

**tunnelid** *tunnel-id* — Specifies the IP address of the ingress node of the tunnel supporting this RSVP session.

**Values** 0 — 4294967295

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

**Values** 1 — 65535

## 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

**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

## Router Commands

**Description** This command displays the HTTP client hash table.

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

<b>Values</b>	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

### 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**]

**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

<b>Syntax</b>	<b>tod</b>
<b>Context</b>	tools>perform>cron
<b>Description</b>	This command enables the context for tools for controlling time-of-day actions.
<b>Default</b>	none

## re-evaluate

<b>Syntax</b>	<b>re-evaluate</b>
<b>Context</b>	tools>perform>cron>tod
<b>Description</b>	This command enables the context to re-evaluate the time-of-day state.
<b>Default</b>	none

## customer

<b>Syntax</b>	<b>customer</b> <i>customer-id</i> [ <b>site</b> <i>customer-site-name</i> ]
<b>Context</b>	tools>perform>cron>tod>re-eval
<b>Description</b>	This command re-evaluates the time-of-day state of a multi-service site.
<b>Parameters</b>	<i>customer-id</i> — Specify an existing customer ID. <b>Values</b> 1 — 2147483647 <i>site customer-site-name</i> — Specify an existing customer site name.

## filter

<b>Syntax</b>	<b>filter</b> <i>filter-type</i> [ <i>filter-id</i> ]
<b>Context</b>	tools>perform>cron>tod>re-eval
<b>Description</b>	This command re-evaluates the time-of-day state of a filter entry.
<b>Parameters</b>	<i>filter-type</i> — Specify the filter type. <b>Values</b> ip-filter, ipv6-filter, mac-filter <i>filter-id</i> — Specify an existing filter ID. <b>Values</b> 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` — Specify 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 439](#) 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` — Specify an existing TOD name.

## 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}`

**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

## Performance Tools

**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**

**Context** tools>perform>router>isis

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

## mcac

**Syntax** **mcac**

**Context** tools>perform>router

## Performance Tools

**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** *connection-id*

**Context** tools>perform>router>l2tp

**Description** This command configures tools for an operational tunnel.

## Performance Tools

**Default** none

**Parameters** *connection-id* — 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** *lsp-name* [**force** [**bandwidth** *mbps*]]]

**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** *lsp-name* — 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** *mbps* — 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

<b>Description</b>	This command computes a CSPF path with specified user constraints.
<b>Default</b>	none
<b>Parameters</b>	<p><b>to</b> <i>ip-addr</i> — Specify the destination IP address.</p> <p><b>from</b> <i>ip-addr</i> — Specify the originating IP address.</p> <p><b>bandwidth</b> <i>bandwidth</i> — Specifies the amount of bandwidth in mega-bits per second (Mbps) to be reserved.</p> <p><b>include-bitmap</b> <i>bitmap</i> — Specifies to include a bit-map that specifies a list of admin groups that should be included during setup.</p> <p><b>exclude-bitmap</b> <i>bitmap</i> — Specifies to exclude a bit-map that specifies a list of admin groups that should be included during setup.</p> <p><b>hop-limit</b> <i>limit</i> — Specifies the total number of hops a detour LSP can take before merging back onto the main LSP path.</p> <p><b>exclude-address</b> <i>ip-addr</i> — Specifies an IP address to exclude from the operation.</p> <p><b>use-te-metric</b> — Specifies whether the TE metric would be used for the purpose of the LSP path computation by CSPF.</p> <p><b>skip-interface</b> <i>interface-name</i> — Specifies a local interface name, instead of the interface address, to be excluded from the CSPF computation.</p> <p><b>ds-class-type</b> <i>class-type</i> — Specifies the class type.</p> <p><b>Values</b> 0 — 7</p> <p><b>cspf-reqtype</b> <i>req-typ</i> — Specifies the CSPF request type.</p> <p><b>Values</b> all — Specifies all ECMP paths. random — Specifies random ECMP paths. least-fill — Specifies minimum fill path.</p>

## resignal

<b>Syntax</b>	<b>resignal lsp</b> <i>lsp-name</i> <b>path</b> <i>path-name</i> <b>delay</b> <i>minutes</i> <b>resignal</b> { <b>p2mp-lsp</b> <i>p2mp-lsp-name</i> <b>p2mp-instance</b> <i>p2mp-instance-name</i>   <b>p2mp-delay</b> <i>p2mp-minutes</i> }
<b>Context</b>	tools>perform>router>mpls
<b>Description</b>	Use this command to resignal a specific LSP path.
<b>Default</b>	none
<b>Parameters</b>	<p><b>lsp</b> <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.</p> <p><b>path</b> <i>path-name</i> — Specifies the name for the LSP path up to 32 characters in length.</p> <p><b>delay</b> <i>minutes</i> — Specifies the resignal delay in minutes.</p> <p><b>Values</b> 0 — 30</p>

## Performance Tools

**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* — Specify the number of traps in multiples of 100. An error messages is generated if an invalid value is entered.

**Values** 100 to 1000

*time-interval* — Specify 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`

## Performance Tools

**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 [*lsa-type*] [*area-id*]

**Context** tools>perform>router>ospf  
tools>perform>router>ospf3

**Description** This command refreshes LSAs for OSPF.

**Default** none

**Parameters** *lsa-type* — Specify the LSA type using allow keywords.

**Values** router, network, summary, asbr, extern, nssa, opaque

*area-id* — 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 *externals-only*

**Context** tools>perform>router>ospf  
tools>perform>router>ospf3

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

**Default** none

**Parameters** *externals-only* — Specify 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* **secret** *key* [**source-address** *ip-address*] [**timeout** *seconds*] [**router** *router-instance*]

**Context** tools>perform>security

**Description** This command checks connection to the RADIUS server.

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

<b>Values</b>	<i>router-name:</i>	Base , management
	<i>service-id:</i>	1 — 2147483647

**Default** Base

## 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* — Specify 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* — Specify 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* — Specify 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* — Specify 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
=====
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 439](#) 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 439](#) 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

**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 439](#) 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.
  - ϕ For a SAP with a configured MAC in "lease-populate" command, this MAC will be taken.
  - ϕ For a SAP without a configured MAC the MAC from tools command will be taken.
  - ϕ 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.

## Performance Tools

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 l2-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 439](#) 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 l2-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

