

Verifying That MPLS Is Working Correctly

To verify that MPLS is working correctly on EX-series switches, perform the following tasks:

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Verifying the Physical Layer on the Switches

Purpose Verify that the interfaces are up. Perform this verification task on each of the switches.

Action user@switch> **show interfaces terse**

Interface	Admin	Link	Proto	Local	Remote
ge-0/0/0	up	up			
ge-0/0/0.0	up	up			
ge-0/0/1.0	up	up	ccc		
ge-0/0/2.0	up	up	ccc		
ge-0/0/3.0	up	up	eth-switch		
ge-0/0/4.0	up	up	eth-switch		
ge-0/0/5.0	up	up	inet	10.1.5.1/24	
mpls					
ge-0/0/6.0	up	up	inet	10.1.6.1/24	
mpls					

Meaning The **show interfaces terse** command displays status information about the Gigabit Ethernet interfaces on the switch. This output verifies that the interfaces are **up**. The output for the protocol family (**Proto** column) shows that interfaces **ge-0/0/1.0** and **ge-0/0/2.0** are configured as circuit cross-connect. The **Local** and **Remote** columns do not display IP addresses, because the **inet** family is not configured for CCC interfaces. The output for the protocol family of the core interfaces (**ge-0/0/0.5** and **ge-0/0/0.6**), shows that these interfaces are configured as both **inet** and **mpls**. The **Local** column for the core interfaces shows the IP address configured for these interfaces.

Verifying the Routing Protocol

Purpose Verify the state of the configured routing protocol. You should perform this verification task on each of the switches. The state should be **Full**. If you have configured OSPF as the routing protocol, use the **show ospf neighbor** command to verify that the routing protocol is communicating with the switch neighbors. If you have configured IS-IS as the routing protocol, use the **show isis adjacency** command to verify that the routing protocol is communicating with the switch neighbors.

Action user@switch> **show ospf neighbor**

Address	Interface	State	ID	Pri	Dead
127.1.1.2	ge-0/0/5	Full	10.10.10.10	128	39

Meaning The show ospf neighbor command displays the status of the routing protocol that has been configured on this switch. The output shows that the state is full, meaning that the routing protocol is operating correctly—that is, hello packets are being exchanged between directly connected neighbors. For additional information on checking and monitoring routing protocols, see the *JUNOS Software Routing Protocols and Policies Command Reference* at <http://www.juniper.net/techpubs/software/junos/junos95/index.html>.

Verifying the Core Interfaces Being Used for the MPLS Traffic

Purpose Verify that the state of the MPLS interface is Up. You should perform this verification task on each of the switches.

Action user@switch> **show mpls interface**

Interface	State	Administrative groups
ge-0/0/5	Up	<none>

Meaning The show mpls interface command displays the status of the core interfaces that have been configured to belong to family mpls. This output shows that the interface configured to belong to family mpls is up.

Verifying RSVP

Purpose Verify the state of the RSVP session. You should perform this verification task on each of the switches.

Action user@switch> **show rsvp session**

```
Ingress RSVP: 1 sessions
To          From          State  Rt  Style Labelin Labelout LSPname
127.1.1.3   127.1.1.1   Up     0   1 FF    -      300064
lsp_to_pe2_ge1
Total 1 displayed, Up 1, Down 0
```

```
Egress RSVP: 1 sessions
To          From          State  Rt  Style Labelin Labelout LSPname
127.1.1.1   127.1.1.3   Up     0   1 FF    299968 -
lsp_to_pe1_ge1
Total 1 displayed, Up 1, Down 0
```

```
Transit RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0
```

Meaning This output confirms that the RSVP sessions are Up.

Verifying the Assignment of Interfaces for MPLS Label Operations

Purpose Verify which interface is being used as the beginning of the CCC and which interface is being used to push the MPLS packet to the next hop. You should perform this task only on the provider edge switches.

Action user@switch> **show route forwarding-table family mpls**

MPLS:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		dscd	50	1	
0	user	0		recv	49	3	
1	user	0		recv	49	3	
2	user	0		recv	49	3	
299776	user	0		Pop	541	2	ge-0/0/1.0
ge-0/0/1.0 (CCC)	user	0	127.1.2.1	Push	299792	540	2 ge-0/0/5.0

Meaning This output shows that CCC has been set up on interface ge-0/0/1.0. The switch receives ingress traffic on ge-0/0/1.0 with label 299776. It pops that label and swaps it to label 299792, which it pushes out on interface ge-0/0/5.0.

Verifying the Status of the CCC

Purpose Verify the status of the CCC. You should perform this task only on the provider edge switches.

Action user@switch> **show connections**

CCC and TCC connections [Link Monitoring On]

Legend for status (St)	Legend for connection types
UN -- uninitialized	if-sw: interface switching
NP -- not present	rmt-if: remote interface switching
WE -- wrong encapsulation	lsp-sw: LSP switching
DS -- disabled	tx-p2mp-sw: transmit P2MP switching
Dn -- down	rx-p2mp-sw: receive P2MP switching
-> -- only outbound conn is up	
<- -- only inbound conn is up	Legend for circuit types
Up -- operational	intf -- interface
RmtDn -- remote CCC down	tlsp -- transmit LSP
Restart -- restarting	rlsp -- receive LSP

Connection/Circuit	Type	St	Time last up	# Up trans
ge1-to-pe2	rmt-if	Up	Feb 17 05:00:09	1
ge-0/0/1.0	intf	Up		
lsp_to_pe1_ge1	tlsp	Up		
lsp_to_pe2_ge1	rlsp	Up		

Meaning The show connections command displays the status of the CCC connections. This output verifies that the CCC interface and its associated transmit and receive LSPs are Up.

- Related Topics**
- Configuring MPLS on Provider Edge Switches (CLI Procedure)
 - Configuring MPLS on Provider Switches (CLI Procedure)

