

Chapter 1

Understanding LSP Status Events

Label-switched path (LSP) status events occur in the history log of the `show mpls lsp extensive` command output, and provide detailed information that can help pinpoint the problem with an LSP. This chapter lists and describes many LSP status events. Descriptions generally include sample output of the LSP event, an explanation of what the event means, the possible cause of the event, and any possible actions that you can take. The LSP events are organized alphabetically. (See Table 5.)

Table 5: Checklist for Understanding LSP Status Events

Understanding LSP Status Events Tasks	Possible Action or Command
Displaying LSP Status Events on page 5	<code>show mpls lsp extensive</code>
1. Call Was Cleared by RSVP Event on page 7	Not applicable.
2. Change in Active Path Event on page 8	Not applicable.
3. Clear Call Event on page 8	Not applicable.
4. Deselected as Active Event on page 9	Analyze this event, and refer to events on either side of this event to determine the appropriate action.
5. Down Event on page 9	Analyze this event, and refer to events on either side of this event to determine the appropriate action.
6. Fast Reroute Detour Down Event on page 9	Analyze this event, and refer to events on either side of this event to determine the appropriate action.
7. Fast Reroute Detour Up Event on page 10	Not applicable.
8. Link Protection Down Event on page 11	Include the family <code>mpls</code> statement for all alternate paths for the LSP at the <code>[edit interfaces type-fpc/pic/port.unit]</code> hierarchy level.
9. Link Protection Up Event on page 12	Not applicable.
10. Originate Call Event on page 13	<code>[edit protocols rsvp]</code> <code>set traceoptions file rsvp.log</code> <code>set traceoptions flag packets</code> <code>file show /var/log/rsvp.log</code>
11. Originate Make-Before-Break Call Event on page 14	Not applicable.
12. Record Route Event on page 15	Not applicable.
13. ResvTear Received Event on page 15	Analyze this event, and refer to events on either side of this event to determine the appropriate action.
14. RSVP Disabled Event on page 16	<code>[edit protocols]</code> <code>activate rsvp</code> <code>[edit protocols rsvp]</code> <code>set interface type-fpc/pic/port</code>

Understanding LSP Status Events Tasks	Possible Action or Command
15.RSVP Error Event on page 16	[edit protocols] activate rsvp
16.Selected as Active Path Event on page 17	Not applicable.
17.Session Preempted Event on page 17	Not applicable.
18.Up Event on page 18	Not applicable.

Displaying LSP Status Events

- Purpose** Display extensive information about LSPs, including the 50 most recent history events and the reasons why an LSP might have failed.
- Action** To examine status messages, enter the following JUNOS command-line interface (CLI) operational mode command from the ingress router:

```
user@host> show mpls lsp extensive
```

Sample Output 1 user@R1# run show mpls lsp extensive
Ingress LSP: 1 sessions

```
10.0.0.6
  From: 10.0.0.1, State: Dn, ActiveRoute: 0, LSPname: R1-to-R6
  ActivePath: (none)
  LoadBalance: Random
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  Primary                               State: Dn
    Will be enqueued for recomputation in 3 second(s).
  68 Jan  5 10:02:56 CSPF failed: no route toward 10.0.0.6[9 times]
  67 Jan  5 09:58:33 Deselected as active
  66 Jan  5 09:58:33 CSPF failed: no route toward 10.0.0.6
  65 Jan  5 09:58:33 Clear Call
  64 Jan  5 09:58:33 Session preempted
  63 Jan  5 09:58:33 Down
  62 Jan  5 09:58:32 CSPF failed: no route toward 10.0.0.6[2 times]
  61 Jan  5 09:57:55 10.1.36.2: Explicit Route: wrong delivery
  60 Jan  5 09:57:34 CSPF failed: no route toward 10.0.0.6[2 times]
  59 Jan  5 09:57:28 CSPF: link down/deleted
10.1.36.1(R3.00/10.0.0.3)->10.1.36.2(R6.00/10.0.0.6)
  58 Jan  5 09:54:37 Selected as active path
  57 Jan  5 09:54:37 Record Route: 10.1.13.2 10.1.36.2
  56 Jan  5 09:54:37 Up
  55 Jan  5 09:54:37 Originate Call
  54 Jan  5 09:54:37 CSPF: computation result accepted
  53 Jan  4 18:11:28 CSPF failed: no route toward 10.0.0.6[2 times]
  52 Jan  4 18:10:44 Deselected as active
  51 Jan  4 18:10:44 CSPF failed: no route toward 10.0.0.6
  50 Jan  4 18:10:44 CSPF: link down/deleted
10.1.13.1(R1.00/10.0.0.1)->10.1.13.2(R3.00/10.0.0.3)
  49 Jan  4 18:10:44 RSVP Disabled
  48 Jan  4 18:10:44 RSVP error, subcode 4: protocol shutdown
  47 Jan  4 18:10:44 Down
  46 Jan  4 18:06:15 Up
  45 Jan  4 18:06:15 Down
  44 Jan  4 18:06:10 Selected as active path
  43 Jan  4 18:06:09 Record Route: 10.1.13.2 10.1.36.2
  42 Jan  4 18:06:09 Up
  41 Jan  4 18:06:09 Originate Call
  40 Jan  4 18:06:09 CSPF: computation result accepted
  39 Jan  4 18:05:40 CSPF failed: no route toward 10.0.0.6[2 times]
  38 Jan  4 18:04:57 Deselected as active
  37 Jan  4 18:04:57 CSPF failed: no route toward 10.0.0.6
  36 Jan  4 18:04:57 CSPF: link down/deleted
10.1.13.1(R1.00/10.0.0.1)->10.1.13.2(R3.00/10.0.0.3)
  35 Jan  4 18:04:57 CSPF failed: no route toward 10.0.0.6
  34 Jan  4 18:04:57 Clear Call
  33 Jan  4 18:04:57 Explicit Route: bad strict route
  32 Jan  4 18:04:57 No Route toward dest
  31 Jan  4 18:04:57 Down
```

```

30 Dec 28 13:47:29 Selected as active path
29 Dec 28 13:47:29 Record Route: 10.1.13.2 10.1.36.2
28 Dec 28 13:47:29 Up
27 Dec 28 13:47:29 Originate Call
26 Dec 28 13:47:29 CSPF: computation result accepted
25 Dec 28 13:46:59 CSPF failed: no route toward 10.0.0.6
24 Dec 28 13:46:39 Deselected as active
23 Dec 28 13:46:39 CSPF failed: no route toward 10.0.0.6
22 Dec 28 13:46:39 Clear Call
21 Dec 28 13:46:39 ResvTear received
20 Dec 28 13:46:39 Down
19 Dec 28 13:46:39 10.1.13.2: Session preempted
Created: Mon Dec 13 11:47:18 2004
Total 1 displayed, Up 0, Down 1
[...Output truncated...]

```

Sample Output 2 user@R1> show mpls lsp extensive
[...Output truncated...]
*Primary use-TOKYO State: Up, No-decrement-ttl
Received RRO:
10.222.28.2(flag=0x9) 10.222.4.2(flag=0x1) 10.222.44.2
7 Sep 20 18:13:45 Record Route: 10.222.28.2(flag=0x9)
10.222.4.2(flag=0x1) 10.222.44.2
6 Sep 20 18:13:45 Record Route: 10.222.28.2(flag=0x9)
10.222.4.2 10.222.44.2
5 Sep 20 18:13:45 Fast-reroute Detour Up
4 Sep 20 18:13:42 Selected as active path
3 Sep 20 18:13:42 Record Route: 10.222.28.2 10.222.4.2
10.222.44.2
2 Sep 20 18:13:42 Up
1 Sep 20 18:13:42 Originate Call

Sample Output 3 user@R1> show mpls lsp extensive
[...Output truncated...]
*Primary long State: Up, COS: 6
Bandwidth per class: <ct0 20Mbps> <ct1 2Mbps> <ct2 3Mbps>
OptimizeTimer: 250
Reoptimization in 237 second(s).
Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 50)
10.35.38.2 S 192.168.135.29 S 10.35.39.1 S 10.35.40.2 S 10.35.41.1 S
Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
10=SoftPreempt):
10.35.38.2 (flag=0x09) 192.168.135.29 (flag=0x10) 10.35.39.1
(flag=0x01) 10.35.40.2 (flag=0x01) 10.35.41.1 (flag=0x01)
[...Output truncated...]

What It Means Sample Output 1 from ingress router R1 shows extensive ingress LSP information, including LSP events that led to an LSP failure and the 50 most recent state events.

LSP events in bold are described in this chapter. Descriptions include sample output of the LSP event, an explanation of what the event means, the possible cause of the event, and any possible actions that you can take.

For completeness, events not included in this example output are also described in this chapter to show LSP events that did not occur in the example network configuration, but might occur in your network. The LSP events are organized alphabetically.

Sample Output 2 shows the state of the route received in the Received Record Route (Received RRO) created by fast reroute configurations in the network. The **Received RRO** indicates a series of hops. Each hop has an address followed by a flag. For more information on flags, see the *JUNOS MPLS Network Operations Guide*. In most cases, the **Received RRO** is the same as the computed Explicit Route Object (ERO).

Sample Output 3 shows a **Computed ERO** and a **Received RRO**. In this instance they are the same. However, if **Received RRO** is different from the **Computed ERO**, there is a topology change in the network, and the route is taking a detour.

Call Was Cleared by RSVP Event

LSP Event Call was cleared by RSVP

Sample Output user@R1> show mpls lsp extensive
 [...Output truncated...]
 10.0.0.6
 From: 10.0.0.1, State: Dn, ActiveRoute: 0, LSPName: R1-to-R6
 ActivePath: (none)
 LoadBalance: Random
 Encoding type: Packet, Switching type: Packet, GPID: IPv4
 Primary State: Dn
 Will be enqueued for recomputation in 10 second(s).
 11 Jan 26 14:58:32 CSPF failed: no route toward 10.0.0.6
 10 Jan 26 14:58:25 Deselected as active
 9 Jan 26 14:58:25 CSPF failed: no route toward 10.0.0.6
 8 Jan 26 14:58:25 **Call was cleared by RSVP**
 7 Jan 26 14:58:25 Session preempted
 6 Jan 26 14:58:25 Down
 [...Output truncated...]

What It Means This LSP event indicates that the Resource Reservation Protocol (RSVP) session corresponding to the LSP path was preempted and the corresponding RSVP state deleted.

Cause This LSP event is occurs when you issue the `clear RSVP session` command or trigger preemption of an RSVP session at the ingress router. Depending on the timer value, Constrained Shortest Path First (CSPF) recomputes the path and the LSP comes up again.

Change in Active Path Event

LSP Event Change in active path

Sample Output

```

user@R1> show mpls lsp extensive
[...Output truncated...]
13 Sep 19 00:02:20 Deselected as active
12 Sep 19 00:02:20 ResvTear received
11 Sep 19 00:02:20 Down
10 Sep 19 00:02:20 Change in active path
9 Sep 19 00:02:20
8 Sep 19 00:02:20 10.222.28.2: Explicit Route: bad strict routeChange in active
path
7 Sep 19 00:02:20 CSPF failed: no route toward 192.168.32.1
6 Sep 19 00:02:20 10.222.28.2: No Route toward dest
5 Sep 19 00:00:54 Selected as active path
4 Sep 19 00:00:54 Record Route: 10.222.28.2 10.222.4.2 10.222.44.2
3 Sep 19 00:00:54 Up
2 Sep 19 00:00:54 Originate Call
1 Sep 19 00:00:54 CSPF: computation result accepted
[...Output truncated...]

```

What It Means This LSP event indicates that even though the active physical path has changed, the LSP stays up. Because this network configuration has an alternate (fast-reroute) path available, the event is a **Change in active path** rather than a **Session preempted** event.

Cause The active path might have failed.

Clear Call Event

LSP Event Clear call

Sample Output

```

user@R1> show mpls lsp extensive
[...Output truncated...]
65 Jan 5 09:58:33 Clear Call
64 Jan 5 09:58:33 Session preempted
63 Jan 5 09:58:33 Down
[...Output truncated...]

```

What It Means This LSP event indicates that the LSP was disconnected and restarted.

Cause The clear mpls lsp command was issued on the ingress router to disconnect existing RSVP sessions, release the routes and states associated with the LSP, and then start a new LSP. Issuing this command might impact traffic travelling along the LSP, because a time lag might occur between tearing down the old path and setting up a new path.

Deselected as Active Event

LSP Event Deselected as active

Sample Output user@R1> show mpls lsp extensive
 [...Output truncated...]
 Will be enqueued for recomputation in 18 second(s).
 53 Jan 4 18:11:28 CSPF failed: no route toward 10.0.0.6[2 times]
 52 Jan 4 18:10:44 **Deselected as active**
 51 Jan 4 18:10:44 CSPF failed: no route toward 10.0.0.6
 50 Jan 4 18:10:44 CSPF: link down/deleted
 [...Output truncated...]

What It Means This LSP event indicates that the LSP is no longer the active path.

Cause Typically, other events, similar to those in lines 50 and 51, indicate the reason that the LSP is no longer the active path.

Action Refer to events on either side of this event to determine the appropriate action.

Down Event

LSP Event Down

Sample Output user@R1> show mpls lsp extensive
 [...Output truncated...]
 48 Jan 4 18:10:44 RSVP error, subcode 4: protocol shutdown
 47 Jan 4 18:10:44 **Down**
 46 Jan 4 18:06:15 Up
 45 Jan 4 18:06:15 Down
 [...Output truncated...]

What It Means This LSP event indicates the state of the LSP on January 4 at 1800 hours, 10 minutes, and 44 seconds. The LSP had failed or was down.

Action Refer to events on either side of the Down event to determine why the LSP was down.

Fast Reroute Detour Down Event

LSP Event Fast reroute detour down

Sample Output 1 user@R1> show mpls lsp extensive
 [...Output truncated...]
 10.0.0.6
 From: 10.0.0.1, State: Up, ActiveRoute: 0, LSPname: R1-R6-3
 ActivePath: (primary)
 FastReroute desired
 LoadBalance: Random
 Encoding type: Packet, Switching type: Packet, GPID: IPv4
 *Primary State: Up
 Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 20)
 10.1.15.2 S 10.1.56.2 S
 Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
 10=SoftPreempt):
 10.1.15.2(flag=1) 10.1.56.2

```

9 Feb 15 20:52:56 Fast-reroute Detour Up
8 Feb 15 20:52:53 Fast-reroute Detour Down
7 Feb 15 20:50:00 Record Route: 10.1.15.2(flag=1) 10.1.56.2
6 Feb 15 20:50:00 Fast-reroute Detour Up
5 Feb 15 20:49:57 Selected as active path
4 Feb 15 20:49:57 Record Route: 10.1.15.2 10.1.56.2
3 Feb 15 20:49:57 Up
2 Feb 15 20:49:56 Originate Call
1 Feb 15 20:49:56 CSPF: computation result accepted
Created: Tue Feb 15 20:49:56 2005
Total 3 displayed, Up 3, Down 0
[...Output truncated...]

```

What It Means This LSP event applies only to detours on the router and indicates that the one-to-one (1:1) fast reroute detour to bypass the next downstream node is down.

Cause This LSP event is caused by a failure or configuration change that deletes or resignals the fast reroute detour path. For example, a detour path interface or primary link may be deactivated.

Action Analyze the status to determine if this is the required behavior. If this is not the required behavior, verify the surrounding LSP events to identify the cause of the problem.

Fast Reroute Detour Up Event

LSP Event Fast-reroute Detour Up

Sample Output 1

```

user@R1> show mpls lsp extensive
[...Output truncated...]
10.0.0.6
  From: 10.0.0.1, State: Up, ActiveRoute: 0, LSPname: R1-R6-3
  ActivePath: (primary)
  FastReroute desired
  LoadBalance: Random
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary State: Up
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 20)
    10.1.15.2 S 10.1.56.2 S
    Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
    10=SoftPreempt):
      10.1.15.2(flag=1) 10.1.56.2
      7 Feb 15 20:50:00 Record Route: 10.1.15.2(flag=1) 10.1.56.2
      6 Feb 15 20:50:00 Fast-reroute Detour Up
      5 Feb 15 20:49:57 Selected as active path
      4 Feb 15 20:49:57 Record Route: 10.1.15.2 10.1.56.2
      3 Feb 15 20:49:57 Up
      2 Feb 15 20:49:56 Originate Call
      1 Feb 15 20:49:56 CSPF: computation result accepted
    Created: Tue Feb 15 20:49:57 2005
    Total 3 displayed, Up 3, Down 0
    [...Output truncated...]

```


Sample Output 2 [edit protocols mpls]
 user@R1# show
 label-switched-path R1-R6-3 {
 to 10.0.0.6;
 fast-reroute;
 }
 [...Output truncated...]

What It Means This LSP event only applies to detours on this route, and indicates that a fast reroute detour path is up. Sample Output 1 shows the fast reroute event. Sample Output 2 shows the configuration of fast reroute on ingress router R1.

Cause This LSP event is caused by the correct configuration of a one-to-one (1:1) fast reroute detour, resulting in the successful signaling of a fast reroute detour.

Action Not applicable.

Link Protection Down Event

LSP Event Link protection down

Sample Output 1 user@R1> show configuration protocols mpls
 label-switched-path R1-to-R6 {
 to 10.0.0.6;
 link-protection;
 }
 interface fxp0.0 {
 disable;
 }
 interface all;

Sample Output user@R1> show mpls lsp extensive
 [...Output truncated...]
 10.0.0.6
 From: 10.0.0.1, State: Up, ActiveRoute: 1, LSPname: R1-to-R6
 ActivePath: (primary)
 Link protection desired
 LoadBalance: Random
 Encoding type: Packet, Switching type: Packet, GPID: IPv4
 *Primary State: Up
 Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 2)
 10.1.13.2 S 10.1.36.2 S
 Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
 10=SoftPreempt):
 10.1.13.2(flag=1 Label=101936) 10.1.36.2(Label=3)
 70 Feb 10 11:01:56 Link-protection Up
 69 Feb 10 11:01:56 Selected as active path
 68 Feb 10 11:01:56 Link-protection Down
 67 Feb 10 11:01:56 Link-protection Up
 66 Feb 10 11:01:56 Record Route: 10.1.13.2(flag=1 Label=101936)
 10.1.36.2(Label=3)
 65 Feb 10 11:01:56 Up
 64 Feb 10 11:01:56 Originate Call
 63 Feb 10 11:01:56 CSPF: computation result accepted
 62 Feb 10 11:01:56 Clear Call
 61 Feb 10 11:01:56 Deselected as active
 60 Feb 10 11:01:56 Link-protection Down
 59 Feb 10 10:57:58 Record Route: 10.1.13.2(flag=1 Label=101920)
 10.1.36.2(Label=3)

```

58 Feb 10 10:57:56 Link-protection Up
57 Feb 10 10:56:58 Selected as active path
56 Feb 10 10:56:58 Record Route: 10.1.13.2(Label=101920) 10.1.36.2(Label=3)
55 Feb 10 10:56:58 Up
54 Feb 10 10:56:58 Originate Call
53 Feb 10 10:56:58 CSPF: computation result accepted
52 Feb 10 10:56:58 Clear Call
51 Feb 10 10:56:58 Deselected as active
50 Feb 10 10:56:58 Link-protection Down
49 Feb 10 10:56:35 10.1.56.2: MPLS label allocation failure[2 times]
48 Feb 10 10:48:32 Link-protection Up
47 Feb 10 10:48:32 Selected as active path
[...Output truncated...]

```

What It Means Sample Output 1 shows the MPLS link-protection configuration on R1 for the LSP R1-to-R6.

Sample Output 2 shows that link protection came up and down several times. Link protection comes up when the LSP signals. Line 60 shows the result when RSVP is disabled on all alternate paths out of R6. Lines 68 to 70 are the result when the `clear mpls lsp` command is issued.

Cause This LSP event is caused by a failure or configuration change that deletes or resignals the bypass LSP. For example, you clear the LSP using the `clear mpls lsp` command, or you disable RSVP on all alternate paths for the LSP. The bypass LSP does not use the primary path, instead it looks for an alternate path.

Action Include the family `mpls` statement for all alternate paths for the LSP at the [edit interfaces type-fpc/pic/port.unit] hierarchy level.

Link Protection Up Event

LSP Event Link protection up

Sample Output

```

user@R1> show mpls lsp extensive
[...Output truncated...]
10.0.0.6
  From: 10.0.0.1, State: Up, ActiveRoute: 1, LSPname: R1-to-R6
  ActivePath: (primary)
  Link protection desired
  LoadBalance: Random
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary                               State: Up
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 2)
    10.1.15.2 S 10.1.56.2 S
    Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
10=SoftPreempt):
      10.1.15.2(flag=1 Label=100048) 10.1.56.2(Label=3)
48 Feb 10 10:48:32 Link-protection Up
47 Feb 10 10:48:32 Selected as active path
46 Feb 10 10:48:32 Link-protection Down
45 Feb 10 10:48:32 Link-protection Up
44 Feb 10 10:48:32 Record Route: 10.1.15.2(flag=1 Label=100048)

```

```

10.1.56.2(Label=3)
 43 Feb 10 10:48:32 Up
 42 Feb 10 10:48:32 Originate Call
 41 Feb 10 10:48:32 CSPF: computation result accepted
 40 Feb 10 10:48:32 Clear Call
[...Output truncated...]

```

What It Means This LSP event indicates that the bypass LSP used to provide local protection (link or node protection) was successfully signaled at the first hop.

Action Not applicable.

Originate Call Event

LSP Event Originate call

Sample Output

```

user@R1> show mpls lsp extensive
[...Output truncated...]
 43 Jan  4 18:06:09 Record Route: 10.1.13.2 10.1.36.2
 42 Jan  4 18:06:09 Up
 41 Jan  4 18:06:09 Originate Call
 40 Jan  4 18:06:09 CSPF: computation result accepted
 39 Jan  4 18:05:40 CSPF failed: no route toward 10.0.0.6[2 times]
[...Output truncated...]

```

What It Means This LSP event indicates that the router is issuing an RSVP Path message.

Cause A Path message is transmitted by the ingress router toward the egress router to establish an LSP.

Action To analyze the contents of the Path message, enable RSVP tracing. To configure RSVP tracing, include the `traceoptions` statement at the `[edit protocols rsdp]` hierarchy level. Use the `file` statement to specify the name of the file that receives the output of the tracing operation. All files are placed in the directory `/var/log`. We recommend that you place RSVP tracing output in the file `rsdp-log`. To examine the contents of the `rsdp-log` file, issue the `file show /var/log/rsdp-log` command. For more information about the output of the tracing operation, see “Examining the CSPF Log” on page 71. For more information about RSVP messages see the *JUNOS MPLS Applications Configuration Guide*.

Originate Make-Before-Break Call Event

LSP Event Originate make-before-break call

Sample Output user@R1# run show mpls lsp extensive
Ingress LSP: 3 sessions

```

10.0.0.3
  From: 10.0.0.1, State: Up, ActiveRoute: 5, LSPname: R1-to-R3
  ActivePath: (primary)
  LoadBalance: Random
  Metric: 1
  Autobandwidth
  MinBW: 155Mbps MaxBW: 155Mbps
  AdjustTimer: 300 secs AdjustThreshold: 10%
  Max AvgBW util: 392bps, Bandwidth Adjustment in 101 second(s).
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary State: Up
    Bandwidth: 140Mbps
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 10)
10.1.13.2 S
  Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node
10=SoftPreempt):
    10.1.13.2
      13 Feb 17 21:23:51 Manual Autobw adjustment failed
      12 Feb 17 21:23:51 CSPF failed: no route toward 10.0.0.3
      11 Feb 17 21:16:06 Record Route: 10.1.13.2
      10 Feb 17 21:16:06 Up
      9 Feb 17 21:16:06 Manual Autobw adjustment succeeded
      8 Feb 17 21:16:06 Originate make-before-break call
      7 Feb 17 21:16:06 CSPF: computation result accepted
      6 Feb 17 21:14:51 Selected as active path
      5 Feb 17 21:14:51 Record Route: 10.1.13.2
      4 Feb 17 21:14:51 Up
      3 Feb 17 21:14:51 Originate Call
      2 Feb 17 21:14:51 CSPF: computation result accepted
      1 Feb 17 21:14:22 CSPF failed: no route toward 10.0.0.3[4 times]
[...Output truncated...]

```

What It Means This LSP event indicates that a make-before-break operation is in progress, in which the label-switched router (LSR) signals a new path for the LSP and switches over to this path, tearing down the existing path.

Cause In an adaptive LSP, this LSP event is caused by a change in bandwidth or ERO. For an active LSP path, this LSP is caused by a change in reoptimization or autobandwidth adjustment.

Action Not applicable.

Record Route Event

LSP Event	Record route
Sample Output	<pre> user@R1> show mpls lsp extensive [...Output truncated...] 10.1.36.1(R3.00/10.0.0.3)->10.1.36.2(R6.00/10.0.0.6) 58 Jan 5 09:54:37 Selected as active path 57 Jan 5 09:54:37 Record Route: 10.1.13.2 10.1.36.2 56 Jan 5 09:54:37 Up 55 Jan 5 09:54:37 Originate Call [...Output truncated...] </pre>
What It Means	This LSP event indicates that the recorded route for the session was taken from the Record Route Object (RRO). Address 10.1.13.2 is the IP address of the transit router R3, and address 10.1.36.2 is the IP address of the egress router.

ResvTear Received Event

LSP Event	ResvTear received
Sample Output	<pre> user@R1> show mpls lsp extensive [...Output truncated...] 23 Dec 28 13:46:39 CSPF failed: no route toward 10.0.0.6 22 Dec 28 13:46:39 Clear Call 21 Dec 28 13:46:39 ResvTear received 20 Dec 28 13:46:39 Down 19 Dec 28 13:46:39 10.1.13.2: Session preempted 18 Dec 28 13:42:07 Selected as active path [...Output truncated...] </pre>
What It Means	This LSP event indicates that an RSVP ResvTear message was received. ResvTear messages remove RSVP reservation states along a path. These messages travel upstream toward senders of the session. This message usually appears in the middle of a run of messages that tear the LSP down.
Cause	In some cases, an ResvTear event is received because a router's reservation state times out. In other cases, when the downstream link fails, the upstream node must eliminate all RSVP states and initiates a ResvTear event. If you are running Fast ReRoute, the upstream node initiates a PathErr message, not a ResvTear message. It is beyond the scope of this document to include all possible reasons for an ResvTear event.
Action	Analyze the status to determine if this is the required behavior. If this is not the required behavior, verify the surrounding LSP events to identify the cause of the problem.

RSVP Disabled Event

LSP Event	RSVP disabled
Sample Output	<pre>user@R1> show mpls lsp extensive [...Output truncated...] 49 Jan 4 18:10:44 RSVP Disabled 48 Jan 4 18:10:44 RSVP error, subcode 4: protocol shutdown 47 Jan 4 18:10:44 Down [...Output truncated...]</pre>
What It Means	This LSP event indicates that the RSVP was specifically disabled, as opposed to not configured.
Cause	This is a local router error message indicating that the RSVP protocol was either disabled at the [edit protocols] hierarchy level, or an interface was omitted from the RSVP configuration.
Action	To enable the RSVP protocol if it was disabled, enter the activate rsvp command at the [edit protocols] hierarchy level. If an interface was omitted from the RSVP configuration, include the interface at the [edit protocols rsvp] hierarchy level

RSVP Error Event

LSP Event	RSVP error
Sample Output 1	<pre>user@R1> show mpls lsp extensive [...Output truncated...] 50 Jan 4 18:10:44 CSPF: link down/deleted 10.1.13.1(R1.00/10.0.0.1)->10.1.13.2(R3.00/10.0.0.3) 49 Jan 4 18:10:44 RSVP Disabled 48 Jan 4 18:10:44 RSVP error, subcode 4: protocol shutdown 47 Jan 4 18:10:44 Down 46 Jan 4 18:06:15 Up 45 Jan 4 18:06:15 Down [...Output truncated...]</pre>
Sample Output 2	<pre>user@R1> show mpls lsp extensive [...Output truncated...] 9 Jan 14 14:21:01 Deselected as active 8 Jan 14 14:21:01 10.0.22.2: RSVP error, subcode 4: protocol shutdown 7 Jan 14 14:21:01 ResvTear received 6 Jan 14 14:21:01 Down 5 Jan 14 12:35:16 Selected as active path 4 Jan 14 12:35:16 Record Route: 10.0.21.2 10.0.22.2 10.0.29.2 3 Jan 14 12:35:16 Up 2 Jan 14 12:35:16 Originate Call 1 Jan 14 12:35:16 CSPF: computation result accepted [...Output truncated...]</pre>

- What It Means** This LSP event indicates that an RSVP error object was received and RSVP was disabled. For a list of error codes, see Table 21 on page 150. For more information on RSVP error codes, see RFC 2205, *Resource ReSerVation Protocol (RSVP), Version 1, Functional Specification*, or RFC 3209, *RSVP-TE: Extensions to RSVP for LSP Tunnels*.
- Cause** Sample Output 1 shows that the protocol was disabled on the ingress router. Sample Output 2 shows that the router with the IP address 10.0.22.2 notified the ingress router that RSVP was disabled.
- Action** To bring the LSP back up, enable RSVP at the [edit protocols] hierarchy level.

Selected as Active Path Event

- LSP Event** Selected as active path
- Sample Output**
- ```
user@R1> show mpls lsp extensive
[...Output truncated...]
 44 Jan 4 18:06:10 Selected as active path
 43 Jan 4 18:06:09 Record Route: 10.1.13.2 10.1.36.2
[...Output truncated...]
```
- What It Means** This LSP event indicates that the LSP is up and selected as the active path. Conversely, an LSP can be up, but not active. See “Up Event” on page 18 for more information.

## Session Preempted Event

---

- LSP Event** Session preempted
- Sample Output 1**
- ```
user@R1> show mpls lsp extensive
[...Output truncated...]
 21 Dec 28 13:46:39 ResvTear received
 20 Dec 28 13:46:39 Down
 19 Dec 28 13:46:39 10.1.13.2: Session preempted
 18 Dec 28 13:42:07 Selected as active path
 17 Dec 28 13:42:07 Record Route: 10.1.13.2 10.1.36.2
[...Output truncated...]
```
- Sample Output 2**
- ```
user@R1> show mpls lsp extensive
[...Output truncated...]
 66 Jan 5 09:58:33 CSPF failed: no route toward 10.0.0.6
 65 Jan 5 09:58:33 Clear Call
 64 Jan 5 09:58:33 Session preempted
 63 Jan 5 09:58:33 Down
 62 Jan 5 09:58:32 CSPF failed: no route toward 10.0.0.6[2 times]
61 Jan 5 09:57:55 10.1.36.2: Explicit Route: wrong delivery
 60 Jan 5 09:57:34 CSPF failed: no route toward 10.0.0.6[2 times]
 59 Jan 5 09:57:28 CSPF: link down/deleted
10.1.36.1(R3.00/10.0.0.3)->10.1.36.2(R6.00/10.0.0.6)
[...Output truncated...]
```

- What It Means** This LSP event indicates that the LSP session was taken over. Sample Output 1 shows the IP address (10.1.13.2) included with the event, indicating the IP address of the router that sent the message. Sample Output 2 does not include an IP address, indicating that the message originated on the ingress router.
- Cause** The state of the network might have changed, as shown in Sample Output 1, or an LSP with a higher priority might be using the bandwidth of the LSP.
- Action** Refer to the events preceding this event in the history log for more information on what might have caused the preemption. For example, in line 62, the **CSPF failed** message may indicate that you specified a disable constrained-path (**no-cspf**) LSP and an explicit route address that is strict and not directly connected. Additionally, the egress router might have changed its configuration, making the destination address unreachable.

## Up Event

---

**LSP Event** Up

**Sample Output**

```
user@R1> show mpls lsp extensive
[...Output truncated...]
 48 Jan 4 18:10:44 RSVP error, subcode 4: protocol shutdown
 47 Jan 4 18:10:44 Down
 46 Jan 4 18:06:15 Up
 45 Jan 4 18:06:15 Down
[...Output truncated...]
```

**What It Means** This LSP event indicates the state of the LSP on January 4 at 1800 hours, 6 minutes, and 15 seconds. The LSP was able to forward traffic, but was not necessarily the active path, it was simply up. For example, an LSP can be up but not active when it is a secondary LSP configured with the **standby** statement at the [edit protocols mpls] hierarchy level. Similarly, a primary LSP may have failed while waiting for two retry intervals before the LSP reverts back from the secondary LSP to the primary LSP.