

Chapter 16

RSVP Monitoring and Troubleshooting

Table 55 summarizes the command-line interface (CLI) commands you can use to monitor the RSVP. In the table, the commands are grouped by functionality. In the remainder of this chapter, they are explained alphabetically.

Table 55: Commands for Monitoring RSVP

Task or Information to Monitor	Command
Status of interfaces on which RSVP is running.	show rsvp interface on page 505
Neighbors with which this router exchanges information.	show rsvp neighbor on page 507
Currently active RSVP sessions.	show rsvp session on page 508
Clear all RSVP sessions.	clear rsvp session on page 504
RSVP packet and error counters.	show rsvp statistics on page 512
Clear RSVP packet and error counters.	clear rsvp statistics on page 504
RSVP version and configuration information.	show rsvp version on page 514

• clear rsvp session

• **Syntax** clear rsvp session <lsp-name>

• **Description** Tear down RSVP sessions. RSVP PathTear and ResvTear messages tear down the sessions.

• **Options** none—Reset and restart all LSPs that this router knows about; that is, all LSPs for which this router is the ingress, transit, or egress router. Depending on the number of LSPs involved, it might take a while to tear down all the LSPs.

• *lsp-name*—(Optional) Reset and restart the specified LSP.

• **Required Privilege Level** clear

• **See Also** clear mpls lsp on page 486

• **Sample Output** user@host> clear rsvp session
user@host>

• clear rsvp statistics

• **Syntax** clear rsvp statistics

• **Description** Clear RSVP packet and error counters.

• **Required Privilege Level** clear

show rsvp interface

Syntax	show rsvp interface <brief detail>
Description	Display the status of each interface on which RSVP is enabled, and display packet statistics for each interface.
Options	brief—(Optional) Display brief interface information. detail—(Optional) Display detailed interface information.
	Default: brief
Required Privilege Level	view
Sample Output	Sample Output: show rsvp interface brief on page 506 Sample Output: show rsvp interface detail on page 506
Options at a Glance	Table 56 summarizes which information is included in the output of each of the show rsvp interface commands. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

Table 56: Show RSVP Interface Output Fields Summary

Options	Field Description
All	Active resv—Number of reservations that are actively reserving bandwidth on the interface.
All	Available BW—Amount of bandwidth that RSVP is allowed to reserved, in bps.
All	Highwater mark—Highest bandwidth that has ever been reserved on this interface, in bps.
All	Interface—Name of the interface.
Detail	Last 5 seconds Received—Number of packets received in the last 5 seconds.
Detail	Last 5 seconds Sent—Number of packets send in the last 5 seconds.
Detail	PacketType—Type of RSVP packet.
All	Reserved BW—Currently reserved bandwidth in bps.
All	RSVP interface—Number of interfaces on which RSVP is active.
All	State—State of the interface. It can be Up or Down.
All	Static BW—Reservation bandwidth in bits per second (bps).
All	Subscription—User-configured subscription factor. The default is 100%.
Detail	Total Received—Total number of packets received.
Detail	Total Sent—Total number of packets sent.

- Output Fields** RSVP interface—Number of interfaces on which RSVP is active. Each interface has one line of output.
- Interface—Name of the interface.
- State—State of the interface. It can be Up or Down.
- Active resv—Number of reservations that are actively reserving bandwidth on the interface.
- Subscription—User-configured subscription factor. The default is 100%.
- Static BW—Reservation bandwidth in bits per second (bps).
- Available BW—Amount of bandwidth that RSVP is allowed to reserved, in bps. It is equal to (static bandwidth * subscription factor).
- Reserved BW—Currently reserved bandwidth in bps.
- Highwater mark—Highest bandwidth that has ever been reserved on this interface, in bps.
- PacketType—(Detail output only) Type of RSVP packet.
- Total Sent—(Detail output only) Total number of packets sent.
- Total Received—(Detail output only) Total number of packets received.
- Last 5 seconds Sent—(Detail output only) Number of packets send in the last 5 seconds.
- Last 5 seconds Received—(Detail output only) Number of packets received in the last 5 seconds.

Sample Output: show rsvp interface brief

```

user@host> show rsvp interface brief
RSVP interface: 1 active
          Active Subscr- Static   Available   Reserved   Highwater
Interface State resv  iption  BW         BW         BW         mark
de0.0     Up      1     23%  10Mbps    989.992kbps 1.31Mbps   1.31Mbps
    
```

Sample Output: show rsvp interface detail

```

user@host> show rsvp interface detail
RSVP interface: 1 active
          Active Subscr- Static   Available   Reserved   Highest
Interface State resv  iption  BW         BW         BW         BW
de0.0     Up      1     23%  10Mbps    989.992kbps 1.31Mbps   1.31Mbps
  PacketType          Total
                Sent      Received
Path              8288           0
PathErr            0           0
PathTear           0           0
Resv                0          3372
ResvErr            1685          0
ResvTear           0           0
    
```

show rsvp neighbor

Syntax show rsvp neighbor

Description Display a list of RSVP neighbors that were learned dynamically when exchanging RSVP packets. Once a neighbor is learned, it is never removed from the list of RSVP neighbors.

Required Privilege Level view

Output Fields RSVP neighbor—Number of neighbors about which the router has learned. Each neighbor has one line of output.

Address—Address of a learned neighbor.

Idle—Amount of time the neighbor has been idle, in seconds.

Up/Dn—Neighbor up/down transitions as detected by RSVP hello packets. If the up count is 1 greater than the down count, the neighbor is currently up. Otherwise, the neighbor is down. Neighbors that do not support RSVP hello packets, such as routers running JUNOS Release 3.2 or earlier, are not reported as being up or down.

LastChange—How long ago the neighbor state changed (either from up to down or from down to up).

HelloInt—Configure hello interval for the neighbor.

HelloTx/Rx—Number of hello packets that have been sent to and received from the neighbor.

MsgRcvd—Number of Path and Resv messages that this router has received from the neighbor.

MsgType—Types of RSVP messages that this router has received from the neighbor. Only Path and Resv messages are counted.

Sample Output user@host> **show rsvp neighbor**

```

RSVP neighbor: 3 learned
Address      Idle Up/Dn LastChange HelloInt HelloTx/Rx MsgRcvd MsgType
192.169.200.1 5 1/0 1:27:49 3 1713/1713 504 Path
192.169.200.18 5 1/0 1:27:49 3 1714/1714 501 Resv
192.169.200.26 5 1/0 1:27:53 3 1714/1714 0 -

```

show rsvp session

Syntax show rsvp session <session-type> <lsp-type> <name session-name> <terse | brief | detail>
<up | down>

Description Display information about RSVP sessions.

Options brief—(Optional) Display brief session information.

detail—(Optional) Display detailed session information.

down—(Optional) Display only LSPs that are inactive.

lsp-type—(Optional) Display information about a particular LSP. Because RSVP sessions optionally can be used for MPLS label-switched-path negotiations, this option filters out those sessions that are used for setting up LSPs.

lsp—Sessions used to set up LSPs.

nolsp—Sessions not used to set up LSPs.

name *session-name*—(Optional) Display information about the named session.

session-type—(Optional) Display information about a particular session type:

egress—Sessions that terminate on this router.

ingress—Sessions that originate from this router.

transit—Sessions that transit through this router.

terse—(Optional) Display only a count of the number of sessions, with no information about individual sessions. Specifying this option is useful when there are a large number of sessions.

up—(Optional) Display only LSPs that are active.

Default: brief; display active and inactive LSPs

Required Privilege Level view

Sample Output Sample Output: show rsvp session brief on page 511
Sample Output: show rsvp session terse on page 511
Sample Output: show rsvp session detail on page 511

Options at a Glance Table 57 summarizes which information is included in the output of each of the show rsvp session commands. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

Table 57: Show RSVP Session Output Field Summary

Options	Field Description
Detail	Active Route—Number of active routes (prefixes) that have been installed in the forwarding table to follow this RSVP session.
Detail	address—(First line of each group) Destination (egress router) of the LSP.
Brief	From—Source (ingress router) of the session.
Detail	Egress RSVP—Information about egress RSVP sessions.
Brief Terse	Egress RSVP—Information about egress RSVP sessions, with one session per line of output.
Detail	From—Source (ingress router) of the session.
Detail	...incomplete—The recorded route information is incomplete, possibly because the session is not established.
Detail	Ingress RSVP—Information about ingress RSVP sessions.
Brief Terse	Ingress RSVP—Information about ingress RSVP sessions, with one session per line of output.
Brief Detail	Label in—Incoming label for this LSP.
Brief Detail	Label out—Outgoing label for this LSP.
Brief Detail	LSP name—Name of the LSP.
Brief Detail	LSP state—State of the LSP that is being handled by this RSVP session. It can be either Up or Dn (down).
Detail	PATH rcvfrom—Address of the previous-hop (upstream) router or client, interface the neighbor used to reach this router, and how many packets were received from the upstream neighbor.
Detail	PATH sentto—Address of the next-hop (downstream) router or client, interface used to reach this neighbor, and how many packets were sent to the downstream router.
Detail	Port number—Protocol ID and sender/receiver port used in this RSVP session.
Detail	Record route—Recorded route for the session as taken from the Record Route Object.
Detail	RESV rcvfrom—Address of the previous-hop (upstream) router or client, interface the neighbor used to reach this router, and how many packets were received from the upstream neighbor. The output in this field, which is consistent with that in the PATH rcvfrom field, indicates that the RSVP negotiation is complete. With a RESV, the session cannot come up.
Brief Detail	Resv style—RSVP reservation style. This field consists of two parts. The first is the number of active reservations. The second is the reservation style, which can be FF (fixed filter), SE (shared explicit), or WF (wildcard filter).
Brief	Rt—Number of active routes (prefixes) that have been installed in the routing table to follow this RSVP session. For ingress RSVP sessions, the routing table is the primary IPv4 table (inet.0). For transit and egress RSVP sessions, the routing table is the primary MPLS table (mpls.0).
Detail	Since—Date and time when the RSVP session was initiated.
Brief Detail	Time left—Number of seconds remaining in the lifetime of the reservation.
Brief	To—Destination (egress router) of the session.
Detail	Transit RSVP—Information about transit RSVP sessions.
Brief Terse	Transit RSVP—Information about transit RSVP sessions, with one session per line of output.
Detail	Tspec—Sender's traffic specification, which describes the sender's traffic parameters.

Output Fields Ingress RSVP—(Detail output only) Information about ingress RSVP sessions.

Ingress RSVP—(Brief and Terse output only) Information about ingress RSVP sessions. Each session has one line of output.

Egress RSVP—(Detail output only) Information about egress RSVP sessions.

- Egress RSVP—(Brief and terse output only) Information about the egress RSVP sessions.
• Each session has one line of output.
- Transit RSVP—(Detail output only) Information about transit RSVP sessions.
- Transit RSVP—(Brief and terse output only) Information about the transit RSVP sessions.
• Each session has one line of output.
- To—(Brief output only) Destination (egress router) of the session.
- From—(Brief output only) Source (ingress router) of the session.
- address—(Detail output only; first line of each group) Destination (egress router) of the LSP.
- From—(Detail output only) Source (ingress router) of the session.
- LSP state—(Brief and detail output only) State of the LSP that is being handled by this RSVP
• session. It can be either Up or Dn (down).
- Rt—(Brief output only) Number of active routes (prefixes) that have been installed in the
• routing table to follow this RSVP session. For ingress RSVP sessions, the routing table is
• the primary IPv4 table (inet.0). For transit and egress RSVP sessions, the routing table is
• the primary MPLS table (mpls.0).
- Active Route—(Detail output only) Number of active routes (prefixes) that have been installed
• in the forwarding table to follow this RSVP session. For ingress RSVP sessions, the
• forwarding table is the primary IPv4 table (inet.0). For transit and egress RSVP sessions,
• the forwarding table is the primary MPLS table (mpls.0).
- LSP name—(Brief and detail output only) Name of the LSP.
- Resv style—(Brief and detail output only) RSVP reservation style. This field consists of two
• parts. The first is the number of active reservations. The second is the reservation style,
• which can be FF (fixed filter), SE (shared explicit), or WF (wildcard filter).
- Label in—(Brief and detail output only) Incoming label for this LSP.
- Label out—(Brief and detail output only) Outgoing label for this LSP.
- Time left—(Brief and detail output only) Number of seconds remaining in the lifetime of the
• reservation.
- Since—(Detail output only) Date and time when the RSVP session was initiated.
- Tspec—(Detail output only) Sender's traffic specification, which describes the sender's traffic
• parameters.
- Port number—(Detail output only) Protocol ID and sender/receiver port used in this RSVP
• session.
- PATH rcvfrom—(Detail output only) Address of the previous-hop (upstream) router or client,
• interface the neighbor used to reach this router, and how many packets were received
• from the upstream neighbor.
- PATH sentto—(Detail output only) Address of the next-hop (downstream) router or client,
• interface used to reach this neighbor, and how many packets were sent to the
• downstream router.

RESV rcvfrom—(Detail output only) Address of the previous-hop (upstream) router or client, interface the neighbor used to reach this router, and how many packets were received from the upstream neighbor. The output in this field, which is consistent with that in the PATH rcvfrom field, indicates that the RSVP negotiation is complete. With a RESV, the session cannot come up.

Record route—(Detail output only) Recorded route for the session as taken from the Record Route Object.

...incomplete—(Detail output only) The recorded route information is incomplete, possibly because the session is not established.

Sample Output: show rsvp session brief

```
user@host> show rsvp session brief
Ingress RSVP: 6 sessions
To          From          State Rt Style Labelin Labelout LSPname
192.168.1.1 192.168.1.3   Dn   0  0  -      -      - test1
192.168.1.1 192.168.1.3   Dn   0  0  -      -      - test2
192.168.1.1 192.168.1.3   Dn   0  0  -      -      - test3
192.168.1.4 192.168.1.3   Up   2  1  FF     -      - sf-la
192.168.1.4 192.168.1.3   Up   3  1  FF     -      - test4
192.168.1.4 192.168.1.3   Dn   0  0  -      -      - k0

* indicates this router
```

Sample Output: show rsvp session terse

```
user@host> show rsvp session terse
Ingress RSVP: 34 sessions
Total 34 displayed, Up 32, Down 2

Egress RSVP: 55 sessions
Total 55 displayed, Up 55, Down 0

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

Sample Output: show rsvp session detail

```
user@host> show rsvp session detail
Ingress RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0

Egress RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0

Transit RSVP: 1 sessions

192.168.2.34
  From: 101.0.0.1, LSPstate: Up, ActiveRoute: 1, LSPname: sf01
  Resv style: 1 FF, Label in: 1024, Label out: 0
  Time left: 123, Since: Sat Feb 13 12:45:42 1999
  Tspec: rate 0bps size 0bps peak 320Tbps m 20 M 1500
  Port number: sender 1 receiver 18 protocol 255
  PATH rcvfrom: 192.168.2.17 (so-2/0/0) 1568 pkts
  PATH sentto: 192.168.2.34 (so-0/0/0) 1568 pkts
  RESV rcvfrom: 192.168.2.34 (so-0/0/0) 1568 pkts
  Record route: 192.168.2.17 <self> 192.168.2.34
Total 1 displayed, Up 1, Down 0
```

show rsvp statistics

Syntax show rsvp statistics

Description Display RSVP packet and error statistics.

Required Privilege Level view

Output Fields Packet Type—Statistics about different RSVP messages.

Total Sent—Total number of packets sent since RSVP was enabled.

Total Received—Total number of packets received since RSVP was enabled.

Last 5 seconds Sent—Total number of packets sent in the last 5 seconds.

Last 5 seconds Received—Total number of packets received in the last 5 seconds.

Path—Statistics about Path messages, which are sent from the RSVP sender along the data paths and which store path state information in each node along the path.

PathErr—Statistics about PathErr messages, which are advisory messages that are sent upstream to the sender.

PathTear—Statistics about PathTear messages, which remove path states and dependent reservation states in any routers along a path.

Resv FF—Statistics about fixed-filter reservation style messages, which consist of distinct reservations among explicit senders.

Resv WF—Statistics about wildcard-filter reservation style messages, which consist of shared reservations among wildcard senders.

Resv SE—Statistics about shared-explicit reservation style messages, which consist of shared reservations among explicit senders.

ResvErr—Statistics about ResvErr messages, which are advisory messages that are sent when an attempt to establish a reservation fails.

ResvTear—Statistics about ResvTear messages, which remove reservation states along a path.

ResvConf—Statistics about ResvConfirm messages, which are responses to confirm a reservation request.

Errors—Statistics about errored RSVP packets.

Rcv pkt bad length—The packet was not processed because its length is inappropriate.

Rcv pkt unknown type—The packet is not one of the well-known RSVP types, as defined in RFC 2205.

Rcv pkt bad version—The packet is not an RSVP version 1 packet.

Rcv pkt bad cksum—The RSVP checksum check failed.

Rcv pkt bad format—General packet processing failed because the packet was badly formed.

- Memory alloc fail—An internal resource failures occurred.
- No path info—A reservation was received, but no sender is active.
- Resv style conflict—The same session contains inconsistent reservation styles.
- Port conflict—There were inconsistent port numbers for the same session.
- Resv no interface—An interface for the receive reservation packets cannot be located.
- PathErr to client—Number of PathErr packets delivered to the local client.
- ResvErr to client—Number of ResvErr packets delivered to the local client.
- Path timeout—Number of times the sender timed out because the path was removed.
- Resv timeout—Number of times the receiver timed out because the reservation was removed.

Sample Output

```

user@host> show rsvp statistics
PacketType          Total                Last 5 seconds
                   Sent      Received          Sent      Received
Path                842         0                2         0
PathErr             0          614               0         0
PathTear            0           0                0         0
Resv FF             0          282               0         4
Resv WF             0           0                0         0
Resv SE             0           0                0         0
ResvErr            0           0                0         0
ResvTear            0           0                0         0
ResvConf           0           0                0         0

Errors              Total                Last 5 seconds
Rcv pkt bad length 0                    0
Rcv pkt unknown type 0                    0
Rcv pkt bad version 0                    0
Rcv pkt bad cksum    0                    0
Rcv pkt bad format   0                    0
memory alloc fail    0                    0
no path info         0                    0
Resv style conflict  0                    0
Port conflict        0                    0
Resv no interface    0                    0
PathErr to client    614                  0
ResvErr to client    0                    0
Path timeout         0                    0
Resv timeout         0                    0
    
```

• show rsvp version

•
• **Syntax** show rsvp version

• **Description** Display information about the version of the RSVP software and the settings of the refresh timer and keep multiplier.

• **Required Privilege Level** view

• **Sample Output** user@host> **show rsvp version**
Resource ReSerVation Protocol, version 1. rfc2205
RSVP protocol = Enabled
R (refresh timer) = 30 seconds
K (keep multiplier) = 3