



RSVP Commands

Use the commands in this chapter to configure and monitor the Resource Reservation Protocol (RSVP), which is a signalling protocol. For RSVP configuration information and examples, refer to the “Configuring RSVP” chapter of the *Network Protocols Configuration Guide, Part 1*.

ip rsvp bandwidth

To enable RSVP for IP on an interface, use the **ip rsvp bandwidth** interface configuration command. To disable RSVP, use the **no** form of the command.

```
ip rsvp bandwidth [interface-kbps] [single-flow-kbps]  
no ip rsvp bandwidth [interface-kbps] [single-flow-kbps]
```

Syntax Description

<i>interface-kbps</i>	(Optional) Amount of bandwidth (in kbps) on interface to be reserved. The range is 1 to 10,000,000.
<i>single-flow-kbps</i>	(Optional) Amount of bandwidth (in kbps) allocated to a single flow. The range is 1 to 10,000,000.

Default

Disabled

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

RSVP is disabled by default to allow backward compatibility with systems that do not implement RSVP.

Example

The following example shows a T1 (1536 kbps) link configured to permit RSVP reservation of up to 1158 kbps, but no more than 100 kbps for any given flow on Ethernet 0 and serial 0 interfaces. Fair queuing is configured with 15 reservable queues to support those reserved flows, should they be required.

```
interface Ethernet 0  
  ip rsvp bandwidth 1158 100  
interface serial 0  
  fair-queue 64 256 15
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

ip rsvp neighbors
ip rsvp reservation
ip rsvp sender
ip rsvp udp-multicast

ip rsvp neighbors

To enable neighbors to request a reservation, use the **ip rsvp neighbors** interface configuration command. To disable this feature, use the **no** form of the command.

```
ip rsvp neighbors access-list-number  
no ip rsvp neighbors access-list-number
```

Syntax Description

access-list-number Number of a standard or extended access list. It can be an integer from 1 to 199.

Default

The router accepts messages from any neighbor.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to allow only specific RSVP neighbors to make a reservation. If no limits are specified, any neighbor can request a reservation. If an access list is specified, only neighbors meeting the specified access list requirements can make a reservation.

Example

The following example allows neighbors meeting access list 1 requirements to request a reservation:

```
interface ethernet 0  
ip rsvp neighbors 1
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

ip rsvp bandwidth
ip rsvp reservation
ip rsvp sender
ip rsvp udp-multicast

ip rsvp reservation

To enable a router to simulate RSVP RESV message reception from the sender, use the **ip rsvp reservation** interface configuration command. To disable this feature, use the **no** form of the command.

```
ip rsvp reservation session-ip-address sender-ip-address [tcp | udp | ip-protocol]
session-dport sender-sport next-hop-ip address nexthop-interface {ff | se | wf} {rate | load}
[bandwidth] [burst-size]
```

```
no ip rsvp reservation session-ip-address sender-ip-address [tcp | udp | ip-protocol]
session-dport sender-sport next-hop-ip address nexthop-interface {ff | se | wf} {rate | load}
[bandwidth] [burst-size]
```

Syntax Description

<i>session-ip-address</i>	For unicast sessions, this is the address of the intended receiver; for multicast sessions, it is the IP multicast address of the session.
<i>sender-ip-address</i>	For unicast sessions, this is the address of the sender; for multicast sessions, it is the IP address of the sender.
tcp udp <i>ip-protocol</i>	(Optional) TCP, UDP, or IP protocol in the range 0 to 255.
<i>session-dport</i> <i>sender-sport</i>	Session-dport is the destination port. Sender-sport is the source port. Port numbers are specified in all cases, as the use of 16-bit ports following the IP header is not limited to UDP or TCP. If destination is zero, source must be zero, and the implication is that ports are not checked. If destination is non-zero, source must be non-zero.
<i>next-hop-ip-address</i>	Hostname or address of the receiver or the router closest to the receiver.
<i>next-hop-interface</i>	Next hop interface or subinterface type and number. Interface type can be ethernet , loopback , null , or serial .
ff se wf	Reservation style: <ul style="list-style-type: none"> Fixed Filter (ff) is single reservation. Shared Explicit (se) is shared reservation, limited scope. Wild Card (wf) is shared reservation, unlimited scope.
rate load	QOS: guaranteed bit rate service or controlled load service.
<i>bandwidth</i>	(Optional) Average bit rate (kbps) to reserve up to 75 percent of total on interface. Range is 1 to 10,000,000.
<i>burst-size</i>	(Optional) Maximum burst size (Kilobytes of data in queue). Range is 1 to 65,535.

Default

The router cannot simulate receiving an RSVP RESV Message.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to force the router to act like it is receiving RSVP RESV messages from the sender.

Examples

The following example specifies the use of a Shared Explicit Filter style of reservation and the Controlled Load Service, with token buckets of 100 or 150 kbps and 60 or 65K maximum queue depth:

```
ip rsvp reservation 224.250.0.2 132.240.1.1 UDP 20 30 132.240.4.1 Et1 se load 100 60
ip rsvp reservation 224.250.0.2 132.240.2.1 TCP 20 30 132.240.4.1 Et1 se load 150 65
```

The following example specifies the use of a Wild Card Filter style of reservation and the Guaranteed Bit Rate Service, with token buckets of 300 or 350 kbps and 60 or 65K maximum queue depth:

```
ip rsvp reservation 224.250.0.3 0.0.0.0 UDP 20 0 132.240.4.1 Et1 wf rate 300 60
ip rsvp reservation 224.250.0.3 0.0.0.0 UDP 20 0 132.240.4.1 Et1 wf rate 350 65
```

Note that the Wild Card Filter does not admit the specification of the sender; it accepts all senders. This is denoted by setting the source address and port to zero. If, in any filter style, the destination port is specified to be zero, RSVP does not permit the source port to be anything else; it understands that such protocols do not use ports or that the specification applies to all ports.

Related Commands

You can use the master indexes or search online to find documentation of related commands.

ip rsvp bandwidth

ip rsvp neighbors

ip rsvp sender

ip rsvp udp-multicast

ip rsvp sender

To enable a router to simulate RSVP PATH message reception from the sender, use the **ip rsvp sender** interface configuration command. To disable this feature, use the **no** form of the command.

ip rsvp sender *session-ip-address sender-ip-address* [**tcp** | **udp** | *ip-protocol*] *session-dport sender-sport previous-hop-ip-address previous-hop-interface* [*bandwidth*] [*burst-size*]

no ip rsvp sender *session-ip-address sender-ip-address* [**tcp** | **udp** | *ip-protocol*] *session-dport sender-sport previous-hop-ip-address previous-hop-interface* [*bandwidth*] [*burst-size*]

Syntax Description

<i>session-ip-address</i>	For unicast sessions, this is the address of the intended receiver; for multicast sessions, it is the IP multicast address of the session.
<i>sender-ip-address</i>	For unicast sessions, this is the address of the sender; for multicast sessions, it is the IP address of the sender.
tcp udp <i>ip-protocol</i>	TCP, UDP, or IP protocol in the range 0 to 255.
<i>session-dport sender-sport</i>	Destination/source ports. Port numbers are specified in all cases, as the use of 16-bit ports following the IP header is not limited to UDP or TCP. If destination is zero, source must be zero, and the implication is that ports are not checked. If destination is non-zero, source must be non-zero.
<i>previous-hop-ip-address</i>	Address of the sender or the router closest to the sender.
<i>previous-hop-interface</i>	Address of the previous hop interface or subinterface. Interface type can be ethernet , loopback , null , or serial .
<i>bandwidth</i>	Average bit rate (kbps) to reserve up to 75 percent of total on interface.
<i>burst-size</i>	Maximum burst size (kilobytes of data in queue).

Default

The router cannot simulate RSVP Path message reception.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to force the router to act like it is receiving RSVP PATH messages from the sender.

Example

The following example sets up the router to act like it is receiving RSVP messages using UDP over the Loopback 1 interface.

```
ip rsvp sender 224.250.0.1 132.240.2.1 udp 20 30 132.240.2.1 loopback 1 50 5
ip rsvp sender 224.250.0.2 132.240.2.1 udp 20 30 132.240.2.1 loopback 1 50 5
ip rsvp sender 224.250.0.2 132.240.2.28 udp 20 30 132.240.2.28 loopback 1 50 5
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

ip rsvp bandwidth

ip rsvp neighbors

ip rsvp reservation

ip rsvp udp-multicast

ip rsvp udp-multicast

To instruct the router to generate UDP-encapsulated RSVP multicasts whenever it generates an IP multicast, use the **ip rsvp udp-multicast** interface configuration command. To disable this feature, use the **no** form of the command.

```
ip rsvp udp-multicast [multicast-address]  
no ip rsvp udp-multicast [multicast-address]
```

Syntax Description

multicast-address (Optional) Host name or UDP multicast address of router.

Default

The generation of UDP multicasts is disabled. If a system sends a UDP-encapsulated RSVP message to the router, the router starts using UDP for contact with the neighboring system. The router uses multicast address 224.0.0.14 and starts sending to UDP port 1699. If the command is entered without specifying a multicast address, the router uses the same multicast address.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to instruct a router to generate UDP-encapsulated RSVP multicasts whenever it generates an IP-encapsulated multicast packet. Some hosts require this trigger from the router.

Example

The following example reserves up to 7500 kbps on the Ethernet 2, with up to 1 Mbps per flow. The router is configured to use UDP encapsulation with the multicast address 224.0.0.14.

```
interface ethernet 2  
  ip rsvp bandwidth 7500 1000  
  ip rsvp udp-multicast 224.0.0.14
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

ip rsvp bandwidth
ip rsvp neighbors
ip rsvp reservation
ip rsvp sender

show ip rsvp interface

To display RSVP-related interface information, use the **show ip rsvp interface** EXEC command.

```
show ip rsvp interface [type number]
```

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the current allocation budget and maximum allocatable bandwidth.

Sample Display

The following is sample output from the **show ip rsvp interface** command:

```
Router# show ip rsvp interface
interfac allocate i/f max  flow max per/255 UDP  IP   UDP_IP  UDP M/C
Et1      0M      7500K  7500K  0 /255 0   0   0      0
Se0      0M      1158K  1158K  0 /255 0   0   0      0
Se1      30K     1158K  1158K  6 /255 0   1   0      0
```

Table 20 describes significant fields shown in the display.

Table 20 Show IP RSVP Interface Field Descriptions

Field	Description
interface	Interface name.
allocate	Current allocation budget.
i/f max	Maximum allocatable bandwidth.
flow max	Maximum flow possible on this interface.
per /255	Percent of bandwidth utilized.
UDP	Number of neighbors sending UDP-encapsulated RSVP.
IP	Number of neighbors sending IP-encapsulated RSVP.
UDP_IP	Number of neighbors sending both.
UDP M/C	Is router configured for UDP on this interface?

show ip rsvp installed

To display RSVP-related installed filters and corresponding bandwidth information, use the **show ip rsvp installed** EXEC command.

show ip rsvp installed [*type number*]

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the current installed RSVP filters and the corresponding bandwidth information for a specified interface or all interfaces.

Sample Display

The following is sample output from the **show ip rsvp installed** command:

```
Router# show ip rsvp installed
RSVP:
RSVP: Ethernet1: has no installed reservations
RSVP: Serial0:
  kbps  To          From          Protocol DPort Sport Weight Conversation
  0     224.250.250.1  132.240.2.28  UDP 20   30   128   270
  150   224.250.250.1  132.240.2.1   UDP 20   30   128   268
  100   224.250.250.1  132.240.1.1   UDP 20   30   128   267
  200   224.250.250.1  132.240.1.25  UDP 20   30   256   265
  200   224.250.250.2  132.240.1.25  UDP 20   30   128   271
  0     224.250.250.2  132.240.2.28  UDP 20   30   128   269
  150   224.250.250.2  132.240.2.1   UDP 20   30   128   266
  350   224.250.250.3  0.0.0.0        UDP 20   0    128   26
```

Table 21 describes significant fields shown in the display.

Table 21 Show IP RSVP Installed Field Descriptions

Field	Description
kbps	Reserved rate.
To	IP address of source device.
From	IP address of destination device.
Protocol DPort	Protocol type of destination UDP/TCP port (no longer the usual protocol).
Sport	Source UDP/TCP port.
Weight	Weight used in Weighted Fair Queuing (WFQ).
Conversation	WFQ conversation number. If the WFQ is not configured on the interface, weight and conversation will be zero.

show ip rsvp neighbor

To display current RSVP neighbors, use the **show ip rsvp neighbor** EXEC command.

```
show ip rsvp neighbor [type number]
```

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the current RSVP neighbors and identify if the neighbor is using IP or UDP encapsulation for a specified interface or all interfaces.

Sample Display

The following is sample output from the **show ip rsvp neighbor** command:

```
Router# show ip rsvp neighbor

Interfac Neighbor      Encapsulation
Se1         132.240.1.49        RSVP
```

show ip rsvp request

To display RSVP-related request information being requested upstream, use the **show ip rsvp request EXEC** command.

```
show ip rsvp request [type number]
```

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the RSVP reservations currently being requested upstream for a specified interface or all interfaces. The received reservations may differ from requests because of aggregated or refused reservations.

Sample Display

The following is sample output from the **show ip rsvp request** command:

```
Router# show ip rsvp request
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
132.240.1.49 132.240.4.53 1 0 0 132.240.3.53 Et1  FF LOAD 30K 3K
```

Table 22 describes significant fields shown in the display.

Table 22 Show IP RSVP Request Field Descriptions

Field	Description
To	IP address of the receiver.
From	IP address of the sender.
Pro	Protocol code. Code 1 indicates ICMP.
DPort	Destination port number.
Sport	Source port number.
Next Hop	IP address of the next hop.
I/F	Interface of the next hop.
Fi	Filter (Wildcard filter, Shared Explicit filter, or Fixed Format filter).
Serv	Service (value can be rate or load).
BPS	Requested rate of the reservation in bits per second.
Bytes	Bytes of burst size requested.

show ip rsvp reservation

To display RSVP-related receiver information currently in the database, use the **show ip rsvp reservation** EXEC command.

```
show ip rsvp reservation [type number]
```

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the current receiver (RESV) information currently in the database for a specified interface or all interfaces. This information includes reservations aggregated and forwarded from other RSVP routers.

Sample Display

The following is sample output from the **show ip rsvp reservation** command:

```
Router# show ip rsvp reservation

To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
132.240.1.49 132.240.4.53 1 0 0 132.240.1.49 Se1 FF LOAD 30K 3K
```

Table 23 describes significant fields shown in the display.

Table 23 Show IP RSVP Reservation Field Descriptions

Field	Descriptions
To	IP address of the receiver.
From	IP address of the sender.
Pro	Protocol code.
DPort	Destination port number.
Sport	Source port number.
Next Hop	IP address of the next hop.
I/F	Interface of the next hop.
Fi	Filter (Wildcard filter, Shared Explicit filter, or Fixed Format filter).
Serv	Service (value can be rate or load).
BPS	Reservation rate in bits per second
Bytes	Bytes of burst size.

show ip rsvp sender

To display RSVP-related sender information currently in the database, use the **show ip rsvp sender EXEC** command.

show ip rsvp sender [*type number*]

Syntax Description

type number (Optional) Interface type and number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to show the current RSVP sender (PATH) information currently in the database for a specified interface or all interfaces.

Sample Display

The following is sample output from the **show ip rsvp sender** command:

```
Router# show ip rsvp sender

To          From          Pro DPort Sport Prev Hop      I/F  BPS  Bytes
132.240.1.49 132.240.4.53  1  0    0    132.240.3.53 Et1  30K  3K
132.240.2.51 132.240.5.54  1  0    0    132.240.3.54 Et1  30K  3K
```

Table 24 describes the fields shown in the display.

Table 24 Show IP RSVP Sender Field Descriptions

Field	Description
To	IP address of the receiver.
From	IP address of the sender.
Pro	Protocol code.
DPort	Destination port number.
Sport	Source port number.
Prev Hop	IP address of previous hop.
I/F	Interface of previous hop.
BPS	Reservation rate in bits per second the application is advertising it might achieve.
Bytes	Bytes of burst size the application is advertising it might achieve.