RSVP Support for RTP Header Compression, Phase 1

The Resource Reservation Protocol (RSVP) Support for Real-Time Transport Protocol (RTP) Header Compression, Phase 1 feature provides a method for decreasing a flow's reserved bandwidth requirements so that a physical link can accommodate more voice calls.

Feature Specifications for RSVP Support for RTP Header Compression, Phase 1

Feature History	
Release	**Modification**
12.2(15)T	This feature was introduced.
Supported Platforms	
For platforms supported in Cisco IOS Release 12.2(15)T, consult Cisco Feature Navigator.	

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at http://www.cisco.com/go/fn. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Contents

Prerequisites for RSVP Support for RTP Header Compression, Phase 1

- Ensure that Real-Time Transport Protocol (RTP) or User Data Protocol (UDP) header compression is configured in the network.
- Ensure that RSVP is configured on two or more routers within the network before you can use this feature.

Restrictions for RSVP Support for RTP Header Compression, Phase 1

- Routers do not generate compression hints, as described in RFC 3006, in this release.
- Signalled compression hints are not supported.
- Admission control with compression is limited to reservations with one sender per session.

Information About RSVP Support for RTP Header Compression, Phase 1

To configure RSVP Support for RTP Header Compression, Phase 1, you need to understand the following concepts:

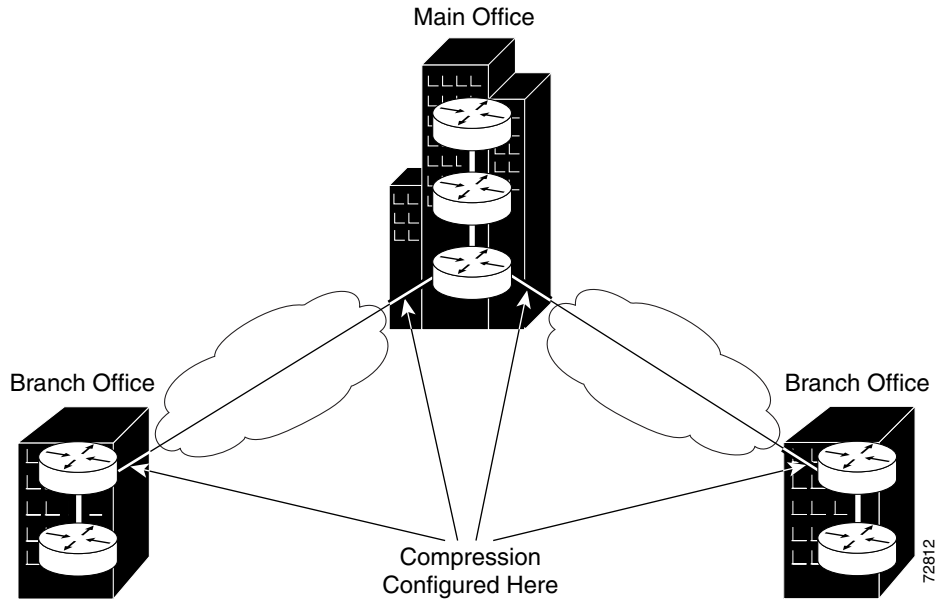
- Feature Design of RSVP Support for RTP Header Compression, Phase 1, page 2
- Benefits of RSVP Support for RTP Header Compression, Phase 1, page 3

Feature Design of RSVP Support for RTP Header Compression, Phase 1

Network administrators use RSVP with Voice over IP (VoIP) to provide quality of service (QoS) for voice traffic in a network. Because VoIP is a real-time application, network administrators often configure compression within the network to decrease bandwidth requirements. Typically, compression is configured on slow serial lines (Figure 1), where the savings from reduced bandwidth requirements outweigh the additional costs associated with the compression and decompression processes.

Note RTP header compression is supported by Cisco routers.

Figure 1 Configuring Compression



Originating applications know if their traffic is considered compressible, but not whether the network can actually compress the data. Additionally, compression may be enabled on some links along the call's path, but not on others. Consequently, the originating applications must advertise their traffic's uncompressed bandwidth requirements, and receiving applications must request reservation of the full amount of bandwidth. This causes routers whose RSVP implementations do not take compression into consideration to admit the same number of flows on a link running compression as on one that is not.

Predicting Compression within Admission Control

Network administrators, especially those whose networks have very low speed links, may want RSVP to use their links as fully as possible. Such links typically have minimum acceptable outgoing committed information rate (minCIR) values between 19 and 30 kbps. Without accounting for compression, RSVP can admit (at most) one G.723 voice call onto the link, despite the link's capacity for two compressed calls. Under these circumstances, network administrators may be willing to sacrifice a QoS guarantee for the last call, if the flow is less compressible than predicted, in exchange for the ability to admit it.

In order to account for compression during admission control, routers use signalled Tspec information, as well as their awareness of the compression schemes running on the flow's outbound interfaces, to make local decisions as to how much bandwidth should actually be reserved for a flow. By reserving fewer resources than signalled by the receiver, RSVP can allow links to be more fully used.

Benefits of RSVP Support for RTP Header Compression, Phase 1

Additional Calls Accommodated on the Same Link

The RSVP Support for RTP Header Compression, Phase 1 feature performs admission control based on compressed bandwidth so that additional voice calls can be accommodated on the same physical link.

How to Configure RSVP Support for RTP Header Compression, Phase 1

This section contains the following procedure:

- Configuring RSVP Admission-Control Compression, page 4 (optional)

Configuring RSVP Admission-Control Compression

Note RSVP predicted compression is enabled by default.

Perform this task to configure RSVP admission-control compression.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** [*type number*]
4. **ip rsvp admission-control compression predict** [**method** {**rtp** | **udp**} [**bytes-saved** *N*]]
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**interface** [*type number*] **Example:** `Router(config-if)# interface Serial3/0`	Enters interface configuration mode. • The *type number* argument identifies the interface to be configured.

	Command or Action	Purpose
Step 4	**ip rsvp admission-control compression predict** [**method** {**rtp** | **udp**} [**bytes-saved** *N*]] **Example:** `Router(config-if)# ip rsvp admission-control compression predict method udp bytes-saved 16`	Configures RSVP admission-control compression prediction. • The optional **method** keyword allows you to select Real-Time Transport Protocol (rtp) or User Data Protocol (udp) for your compression scheme. • The optional **bytes-saved** *N* keyword allows you to configure the predicted number of bytes saved per packet when RSVP predicts that compression will occur using the specified method.
Step 5	**end** **Example:** `Router(config-if)# end`	Exits to privileged EXEC mode.

Verifying RSVP Support for RTP Header Compression, Phase 1 Configuration

Perform this task to verify that the RSVP Support for RTP Header Compression, Phase 1 feature is functioning.

SUMMARY STEPS

1. **enable**
2. **show ip rsvp installed** [**detail**]
3. **show ip rsvp interface** [*interface-type interface-number*] [**detail**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.

	Command or Action	Purpose
Step 2	**show ip rsvp installed** [**detail**] **Example:** `Router# show ip rsvp installed detail`	Displays information about interfaces and their admitted reservations and the resources needed for a traffic control state block (TCSB) after taking compression into account. • The optional **detail** keyword displays the reservation's traffic parameters, downstream hop, compression, and resources used by RSVP to ensure QoS for this reservation.
Step 3	**show ip rsvp interface** [*interface-type interface-number*] [**detail**] **Example:** `Router# show ip rsvp interface detail`	Displays information about interfaces on which RSVP is enabled, including the current allocation budget and maximum available bandwidth and the RSVP bandwidth limit counter, taking compression into account. • The optional **detail** keyword displays RSVP parameters associated with an interface including bandwidth, admission control, and compression methods.

Examples

This section provides the following example output:

- Sample Output for the show ip rsvp installed detail Command, page 6
- Sample Output for the show ip rsvp interface detail Command, page 7

Sample Output for the show ip rsvp installed detail Command

In this example, the **show ip rsvp installed detail** command displays information, including the predicted compression method, its reserved context ID, and the observed bytes saved per packet average, for the admitted flowspec.

```
Router# show ip rsvp installed detail

RSVP: Ethernet2/1 has no installed reservations

RSVP: Serial3/0 has the following installed reservations
RSVP Reservation. Destination is 10.1.1.2. Source is 10.1.1.1,
  Protocol is UDP, Destination port is 18054, Source port is 19156
  Compression: (method rtp, context ID = 1, 37.98 bytes-saved/pkt avg)
  Admitted flowspec:
    Reserved bandwidth: 65600 bits/sec, Maximum burst: 328 bytes, Peak rate: 80K bits/sec
    Min Policed Unit: 164 bytes, Max Pkt Size: 164 bytes
  Admitted flowspec (as required if compression were not applied):
    Reserved bandwidth: 80K bits/sec, Maximum burst: 400 bytes, Peak rate: 80K bits/sec
    Min Policed Unit: 200 bytes, Max Pkt Size: 200 bytes
  Resource provider for this flow:
    WFQ on FR PVC dlci 101 on Se3/0:  PRIORITY queue 24.  Weight: 0, BW 66 kbps
  Conversation supports 1 reservations [0x1000405]
  Data given reserved service: 3963 packets (642085 bytes)
Data given best-effort service: 0 packets (0 bytes)
Reserved traffic classified for 80 seconds
  Long-term average bitrate (bits/sec): 64901 reserved, 0 best-effort
  Policy: INSTALL. Policy source(s): Default
```

Sample Output for the show ip rsvp interface detail Command

In this example, the **show ip rsvp interface detail** command displays the current interfaces and their configured compression parameters.

```
Router# show ip rsvp interface detail

 Et2/1:
   Bandwidth:
     Curr allocated: 0 bits/sec
     Max. allowed (total): 1158K bits/sec
     Max. allowed (per flow): 128K bits/sec
     Max. allowed for LSP tunnels using sub-pools: 0 bits/sec
     Set aside by policy (total): 0 bits/sec
   Admission Control:
     Header Compression methods supported:
       rtp (36 bytes-saved), udp (20 bytes-saved)
Neighbors:
     Using IP encap: 0.  Using UDP encap: 0
   Signalling:
     Refresh reduction: disabled
   Authentication: disabled


Se3/0:
   Bandwidth:
     Curr allocated: 0 bits/sec
     Max. allowed (total): 1158K bits/sec
     Max. allowed (per flow): 128K bits/sec
     Max. allowed for LSP tunnels using sub-pools: 0 bits/sec
     Set aside by policy (total): 0 bits/sec
   Admission Control:
     Header Compression methods supported:
       rtp (36 bytes-saved), udp (20 bytes-saved)
   Neighbors:
     Using IP encap: 1.  Using UDP encap: 0
   Signalling:
     Refresh reduction: disabled
   Authentication: disabled
```

Troubleshooting Tips

The observed bytes-saved per packet value should not be less than the configured or default value. Otherwise, the flow may be experiencing degraded QoS. To avoid any QoS degradation for future flows, configure a lower bytes-saved per packet value.

Flows may achieve less compressibility than the default RSVP assumes for many reasons, including packets arriving out of order or having different differentiated services code point (DSCP) or precedence values, for example, due to policing upstream within the network.

If compression is enabled on a flow's interface, but the compression prediction was unsuccessful, the reason appears in the output instead of the reserved compression ID and the observed bytes-saved per packet.

Configuration Examples for RSVP Support for RTP Header Compression, Phase 1

This section provides the following configuration example:

RSVP Support for RTP Header Compression, Phase 1 Example

The following sample configuration shows the compression prediction enabled for flows using UDP and disabled for flows using RTP:

```
Router# configure terminal

Enter configuration commands, one per line.  End with CNTL/Z.

Router(config)# interface Serial3/0

Router(config-if)# ip rsvp admission-control compression predict method udp bytes-saved 16

Router(config-if)# no ip rsvp admission-control compression predict method rtp
```

Use the **show run** command to display all the RSVP configured parameters:

```
Router# show run

2d18h: %SYS-5-CONFIG_I: Configured from console by console

Router# show run int se3/0

Building configuration...


Current configuration : 339 bytes
!
interface Serial3/0
 ip address 10.2.1.1 255.255.0.0
 max-reserved-bandwidth 80
 fair-queue 64 256 8
 serial restart_delay 0
 clock rate 128000
 ip rtp header-compression
 ip rsvp bandwidth
 no ip rsvp admission-control compression predict method rtp
 ip rsvp admission-control compression predict method udp bytes-saved 16
end
```

Additional References

For additional information related to RSVP Support for RTP Header Compression, Phase 1, refer to the following references:

Related Documents

Related Topic	Document Title
RSVP commands: complete command syntax, command mode, defaults, usage guidelines, and examples	*Cisco IOS Quality of Service Solutions Command Reference*, Release 12.2
QoS features—specifically, signaling	*Cisco IOS Quality of Service Solutions Configuration Guide*, Release 12.2

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs[1]	MIBs Link
• RFC 2206, *RSVP Management Information Base using SMIv2*	To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

1. Not all supported MIBs are listed.

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

http://tools.cisco.com/ITDIT/MIBS/servlet/index

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

http://www.cisco.com/register

RFCs

RFCs[1]	Title
RFC 2205	*Resource Reservation Protocol (RSVP)*
RFC 2508	*Compressing IP/UDP/RTP Headers for Low-Speed Serial Links*
RFC 3006	*Integrated Services in the Presence of Compressible Flows*

1. Not all supported RFCs are listed.

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents new and modified commands. All other commands used with this feature are documented in the Cisco IOS Release 12.2 command reference publications.

New Commands

- **ip rsvp admission-control compression predict**

Modified Commands

- **debug ip rsvp traffic-control**
- **show ip rsvp installed**
- **show ip rsvp interface**

debug ip rsvp traffic-control

To display debug messages for compression-related events, use the **debug ip rsvp traffic-control** command in EXEC mode. To disable the debugging output, use the **no** form of this command.

debug ip rsvp traffic-control

no debug ip rsvp traffic-control

Syntax Description

This command has no arguments or keywords.

Defaults

This command is disabled by default.

Command Modes

EXEC

Command History

Release	Modification
12.0	This command was introduced.
12.2(15)T	The command output was modified to include compression-related events.

Usage Guidelines

Use the **debug ip rsvp traffic-control** command to troubleshoot compression-related problems.

Examples

The following example from the **debug ip rsvp traffic-control** command shows that compression was successfully predicted:

```
Router# debug ip rsvp traffic-control

RSVP debugging is on

Router# show debugging

00:44:49: RSVP-TC: Attempting to install QoS for rsb 62CC66F0
00:44:49: RSVP-TC: Adding new tcsb 02000406 for rsb 62CC66F0
00:44:49: RSVP-TC: Assigning WFQ QoS (on FR VC 101) to tcsb 02000406
00:44:49: RSVP-TC: Predicted compression for TCSB 2000406:
00:44:49: RSVP-TC:   method      = rtp
00:44:49: RSVP-TC:   context ID  = 2
00:44:49: RSVP-TC:   factor      = 82 percent
00:44:49: RSVP-TC:   bytes-saved = 36 bytes
00:44:49: RSVP-TC: Bandwidth check: requested bw=65600 old bw=0
00:44:49: RSVP-TC: RSVP bandwidth is available
00:44:49: RSVP-TC: Consulting policy for tcsb 02000406
00:44:49: RSVP-TC: Policy granted QoS for tcsb 02000406
00:44:49: RSVP-TC: Requesting QoS for tcsb 02000406
00:44:49: RSVP-TC:    ( r = 8200       bytes/s   M = 164        bytes
00:44:49: RSVP-TC:      b = 328        bytes     m = 164        bytes )
00:44:49: RSVP-TC:      p = 10000      bytes/s   Service Level = priority
00:44:49: RSVP-WFQ: Update for tcsb 02000406 on FR PVC dlci 101 on Se3/0
00:44:49: RSVP-WFQ: Admitted 66 kbps of bandwidth
00:44:49: RSVP-WFQ: Allocated PRIORITY queue 24
00:44:49: RSVP-TC: Allocation succeeded for tcsb 02000406
```

The following example from the **debug ip rsvp traffic-control** command shows that compression was unsuccessfully predicted because no compression context IDs were available:

```
Router# debug ip rsvp traffic-control

RSVP debugging is on

Router# show debugging

00:10:16:RSVP-TC:Attempting to install QoS for rsb 62CED62C
00:10:16:RSVP-TC:Adding new tcsb 01000421 for rsb 62CED62C
00:10:16:RSVP-TC:Assigning WFQ QoS (on FR VC 101) to tcsb 01000421
00:10:16:RSVP-TC:sender's flow is not rtp compressible for TCSB 1000421
00:10:16:         reason: no contexts available
00:10:16:RSVP-TC:sender's flow is not udp compressible for TCSB 1000421
00:10:16:         reason: no contexts available
00:10:16:RSVP-TC:Bandwidth check:requested bw=80000 old bw=0
00:10:16:RSVP-TC:RSVP bandwidth is available
00:10:16:RSVP-TC:Consulting policy for tcsb 01000421
00:10:16:RSVP-TC:Policy granted QoS for tcsb 01000421
00:10:16:RSVP-TC:Requesting QoS for tcsb 01000421
00:10:16:RSVP-TC:    ( r = 10000      bytes/s   M = 200        bytes
00:10:16:RSVP-TC:      b = 400        bytes     m = 200        bytes )
00:10:16:RSVP-TC:      p = 10000      bytes/s   Service Level = priority
00:10:16:RSVP-WFQ:Update for tcsb 01000421 on FR PVC dlci 101 on Se3/0
00:10:16:RSVP-WFQ:Admitted 80 kbps of bandwidth
00:10:16:RSVP-WFQ:Allocated PRIORITY queue 24
00:10:16:RSVP-TC:Allocation succeeded for tcsb 01000421
```

Related Commands

Command	Description
show debug	Displays active debug output.

ip rsvp admission-control compression predict

To configure Resource Reservation Protocol (RSVP) admission control compression prediction, use the **ip rsvp admission-control compression predict** command in interface configuration mode. To disable compression prediction, use the **no** form of this command.

ip rsvp admission-control compression predict [**method** {**rtp | udp**} [**bytes-saved** *N*]]

no ip rsvp admission-control compression predict [**method** {**rtp | udp**} [**bytes-saved** *N*]]

Syntax Description

method	(Optional) Type of compression used.
rtp | udp	Real-Time Transport Protocol (rtp) or User Data Protocol (udp) compression schemes.
bytes-saved *N*	(Optional) Predicted number of bytes saved per packet when RSVP predicts that compression will occur using the specified method. Values for *N* for RTP are 1 to 38; for UDP, 1 to 26.

Defaults

This command is enabled by default. The default value of bytes saved for RTP is 36; for UDP, 20.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(15)T	This command was introduced.

Usage Guidelines

Use the **ip rsvp admission-control compression predict** command to disable or enable the RSVP prediction of compression for a specified method or all methods if neither **rtp** nor **udp** is selected. You can adjust the default compressibility parameter that RSVP uses to compute the compression factor for each flow.

If you use the **ip rsvp admission-control compression predict** command to change the compression method or the number of bytes saved per packet, these values affect only new flows, not existing ones.

There are two approaches to compression—conservative and aggressive. When you predict compression conservatively, you assume savings of fewer bytes per packet, but receive a higher likelihood of guaranteed quality of service (QoS). You are allowed more bandwidth per call, but each link accommodates fewer calls. When you predict compression aggressively, you assume savings of more bytes per packet, but receive a lower likelihood of guaranteed QoS. You are allowed less bandwidth per call, but each link accommodates more calls.

Examples

The following command sets the compressibility parameter for flows using the RTP method to 30 bytes saved per packet:

```
Router(config-if)# ip rsvp admission-control compression predict method rtp bytes-saved 30
```

The following command sets the compressibility parameter for flows using the UDP method to 20 bytes saved per packet:

```
Router(config-if)# ip rsvp admission-control compression predict method udp bytes-saved 20
```

The following command disables RTP header compression prediction:

```
Router(config-if)# no ip rsvp admission-control compression predict method rtp
```

The following command disables UDP header compression prediction:

```
Router(config-if)# no ip rsvp admission-control compression predict method udp
```

Note Disabling the compressibility parameter affects only those flows using the specified method.

Related Commands

Command	Description
show ip rtp header-compression	Displays RTP header compression statistics.

show ip rsvp installed

To display information about interfaces and their admitted reservations, use the **show ip rsvp installed** command in EXEC mode.

show ip rsvp installed [*interface-type interface-number*] [**detail**]

Syntax Description

interface-type	(Optional) Specifies the type of the interface.
interface-number	(Optional) Specifies the number of the interface.
detail	(Optional) Specifies additional information about interfaces and their reservations.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(15)T	The command output was modified to display the resources needed for a traffic control state block (TCSB) after compression has been taken into account.

Usage Guidelines

The **show ip rsvp installed** command displays information about interfaces and their reservations. Enter the optional **detail** keyword for additional information, including the reservation's traffic parameters, downstream hop, compression, and resources used by Resource Reservation Protocol (RSVP) to ensure quality of service (QoS) for this reservation.

Examples

The following example from the **show ip rsvp installed detail** command shows the compression parameters, including the compression method, the compression context ID, and the bytes saved per packet, on the serial3/0 interface in effect:

```
Router# show ip rsvp installed detail

RSVP:Ethernet2/1 has no installed reservations

RSVP:Serial3/0 has the following installed reservations
RSVP Reservation. Destination is 10.1.1.2. Source is 10.1.1.1,
  Protocol is UDP, Destination port is 18054, Source port is 19156
  Compression:(method rtp, context ID = 1, 37.98 bytes-saved/pkt avg)
  Admitted flowspec:
    Reserved bandwidth:65600 bits/sec, Maximum burst:328 bytes, Peak rate:80K bits/sec
    Min Policed Unit:164 bytes, Max Pkt Size:164 bytes
  Admitted flowspec (as required if compression were not applied):
    Reserved bandwidth:80K bits/sec, Maximum burst:400 bytes, Peak rate:80K bits/sec
    Min Policed Unit:200 bytes, Max Pkt Size:200 bytes
```

```
  Resource provider for this flow:
    WFQ on FR PVC dlci 101 on Se3/0: PRIORITY queue 24.  Weight:0, BW 66 kbps
  Conversation supports 1 reservations [0x1000405]
  Data given reserved service:3963 packets (642085 bytes)
  Data given best-effort service:0 packets (0 bytes)
  Reserved traffic classified for 80 seconds
  Long-term average bitrate (bits/sec):64901 reserved, 0 best-effort
  Policy:INSTALL. Policy source(s):Default
```

The following example from the **show ip rsvp installed detail** command shows that compression is not predicted on the serial3/0 interface because no compression context IDs are available:

```
Router# show ip rsvp installed detail

RSVP:Ethernet2/1 has no installed reservations

RSVP:Serial3/0 has the following installed reservations
RSVP Reservation. Destination is 10.1.1.2. Source is 10.1.1.1,
  Protocol is UDP, Destination port is 18116, Source port is 16594
  Compression:(rtp compression not predicted:no contexts available)
  Admitted flowspec:
    Reserved bandwidth:80K bits/sec, Maximum burst:400 bytes, Peak rate:80K bits/sec
    Min Policed Unit:200 bytes, Max Pkt Size:200 bytes
  Resource provider for this flow:
    WFQ on FR PVC dlci 101 on Se3/0: PRIORITY queue 24.  Weight:0, BW 80 kbps
  Conversation supports 1 reservations [0x2000420]
  Data given reserved service:11306 packets (2261200 bytes)
  Data given best-effort service:0 packets (0 bytes)
  Reserved traffic classified for 226 seconds
  Long-term average bitrate (bits/sec):79951 reserved, 0 best-effort
  Policy:INSTALL. Policy source(s):Default
```

Note When no context IDs are available, use the **ip rtp compression-connections** *number* command to increase the pool of compression context IDs.

Related Commands

Command	Description
show ip rsvp interface	Displays RSVP-related interface information.

show ip rsvp interface

To display Resource Reservation Protocol (RSVP)-related interface information, use the **show ip rsvp interface** command in EXEC mode.

show ip rsvp interface [*interface-type interface-number*] [**detail**]

Syntax Description

interface-type	(Optional) The type of the interface.
interface-number	(Optional) The number of the interface.
detail	(Optional) Specifies additional information about interfaces.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(2)T	This command was modified to include the **detail** keyword.
12.2(15)T	The command output was modified to display the effects of compression on admission control and the RSVP bandwidth limit counter.

Usage Guidelines

Use the **show ip rsvp interface detail** command to display information about the RSVP parameters associated with an interface. These parameters include the following:

- Total RSVP bandwidth
- RSVP bandwidth allocated to existing flows
- Maximum RSVP bandwidth that can be allocated to a single flow
- The type of admission control supported (header compression methods)
- The compression methods supported by RSVP compression prediction

Examples

The following example from the **show ip rsvp interface detail** command shows the RSVP compression method prediction configuration for each interface on which RSVP is configured:

```
Router# show ip rsvp interface detail

 Et2/1:
   Bandwidth:
     Curr allocated:0 bits/sec
     Max. allowed (total):1158K bits/sec
     Max. allowed (per flow):128K bits/sec
     Max. allowed for LSP tunnels using sub-pools:0 bits/sec
     Set aside by policy (total):0 bits/sec
   Admission Control:
```

```
    Header Compression methods supported:
      rtp (36 bytes-saved), udp (20 bytes-saved)
  Neighbors:
    Using IP encap:0.  Using UDP encap:0
  Signalling:
    Refresh reduction:disabled
  Authentication:disabled

Se3/0:
  Bandwidth:
    Curr allocated:0 bits/sec
    Max. allowed (total):1158K bits/sec
    Max. allowed (per flow):128K bits/sec
    Max. allowed for LSP tunnels using sub-pools:0 bits/sec
    Set aside by policy (total):0 bits/sec
  Admission Control:
    Header Compression methods supported:
      rtp (36 bytes-saved), udp (20 bytes-saved)
  Neighbors:
    Using IP encap:1.  Using UDP encap:0
  Signalling:
    Refresh reduction:disabled
  Authentication:disabled
```

Table 1 describes the significant fields shown in the display for interface Et2/1. The fields for interface Se3/0 are similar.

Table 1 show ip rsvp interface detail Field Descriptions

Field	Description
Et2/1, Se3/0	Interface name.
Bandwidth	The RSVP bandwidth parameters in effect including the following: • Curr allocated = amount of bandwidth currently allocated in bits per second. • Max. allowed (total) = maximum amount of bandwidth allowed in bits per second. • Max. allowed (per flow) = maximum amount of bandwidth allowed per flow in bits per second. • Max. allowed for LSP tunnels using sub-pools = maximum amount of bandwidth allowed for label switched path (LSP) tunnels in bits per second. • Set aside by policy (total) = the amount of bandwidth set aside by the local policy in bits per second.
Admission Control	The type of admission control in effect including the following: • Header Compression methods supported: – Real-Time Transport Protocol (rtp) or User Data Protocol (udp) compression schemes and the number of bytes saved per packet.
Neighbors	The number of neighbors using IP and UDP encapsulation.
Signalling	The type of signaling in effect; Refresh reduction is either enabled (active) or disabled (inactive).
Authentication	Authentication is either enabled (active) or disabled (inactive).

Related Commands

Command	Description
show ip rsvp installed	Displays information about interfaces and their admitted reservations.

Glossary

admission control—The process in which a Resource Reservation Protocol (RSVP) reservation is accepted or rejected based on end-to-end available network resources.

bandwidth—The difference between the highest and lowest frequencies available for network signals. The term also is used to describe the rated throughput capacity of a given network medium or protocol.

compression—The running of a data set through an algorithm that reduces the space required to store or the bandwidth required to transmit the data set.

DSCP—differentiated services code point. The six most significant bits of the 1-byte IP type of service (ToS) field. The per-hop behavior represented by a particular DSCP value is configurable. DSCP values range between 0 and 63.

flow—A stream of data traveling between two endpoints across a network (for example, from one LAN station to another). Multiple flows can be transmitted on a single circuit.

flowspec—In IPv6, the traffic parameters of a stream of IP packets between two applications.

G.723—A compression technique that can be used for compressing speech or audio signal components at a very low bit rate as part of the H.324 family of standards. This codec has two bit rates associated with it: 5.3 and 6.3 kbps. The higher bit rate is based on ML-MLQ technology and provides a somewhat higher quality of sound. The lower bit rate is based on code excited linear prediction (CELP) compression and provides system designers with additional flexibility. Described in the ITU-T standard in its G-series recommendations.

minCIR—The minimum acceptable incoming or outgoing committed information rate (CIR) for a Frame Relay virtual circuit.

packet—A logical grouping of information that includes a header containing control information and (usually) user data. Packets most often refer to network layer units of data.

QoS—quality of service. A measure of performance for a transmission system that reflects its transmission quality and service availability.

router—A network layer device that uses one or more metrics to determine the optimal path along which network traffic should be forwarded. Routers forward packets from one network to another based on network layer information.

RSVP—Resource Reservation Protocol. A protocol that supports the reservation of resources across an IP network. Applications running on IP end systems can use RSVP to indicate to other nodes the nature (bandwidth, jitter, maximum burst, and so on) of the packet streams they want to receive.

RTP—Real-Time Transport Protocol. A protocol that is designed to provide end-to-end network transport functions for applications transmitting real-time data, such as audio, video, or simulation data, over multicast or unicast network services. RTP provides such services as payload type identification, sequence numbering, timestamping, and delivery monitoring to real-time applications.

TCSB—traffic control state block. A Resource Reservatiion Protocol (RSVP) state that associates reservations with their reserved resources required for admission control.

Tspec—Traffic specification. The traffic characteristics of a data stream from a sender or receiver (included in a Path message).

UDP—User Datagram Protocol. A connectionless transport layer protocol in the TCP/IP protocol stack. UDP is a simple protocol that exchanges datagrams without acknowledgments or guaranteed delivery, requiring that error processing and retransmission be handled by other protocols. UDP is defined in RFC 768.

VoIP—Voice over IP. The ability to carry normal telephony-style voice over an IP-based Internet maintaining telephone-like functionality, reliability, and voice quality.