Configuring COPS for RSVP

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This chapter describes the tasks for configuring the COPS for RSVP feature. Common Open Policy Service (COPS) is a protocol for communicating network traffic policy information to network devices. Resource Reservation Protocol (RSVP) is a means for reserving network resources--primarily bandwidth--to guarantee that applications sending end-to-end across the Internet will perform at the desired speed and quality.

For complete conceptual information, see the "Signalling Overview" in this book.

For a complete description of the COPS for RSVP commands in this chapter, refer to the Cisco IOS Quality of Service Solutions Command Reference. To locate documentation of other commands that appear in this chapter, use the command reference master index, or search online.

Finding Support Information for Platforms and Cisco IOS and Catalyst OS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn . An account on Cisco.com is not required.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

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COPS for RSVP Configuration Task List

To configure COPS for RSVP, perform the tasks described in the following sections.

Specifying COPS Servers and Enabling COPS for RSVP

To specify COPS servers and enable COPS for RSVP, use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy cops servers 161.44.130.168 161.44.129.6**

DETAILED STEPS

	Command or Action	Purpose
Step 1	Router(config-if)# **configure terminal**	Enters global configuration mode.
Step 2	Router(config)# **ip rsvp policy cops servers 161.44.130.168 161.44.129.6**	Tells the router to request RSVP policy decisions from the first server listed, and if that fails to connect, from the next server listed. Also enables a COPS-RSVP client on the router.

Restricting RSVP Policy to Specific Access Control Lists

To restrict RSVP policy to specific access control lists (ACLs), use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy cops 40 160 servers 161.44.130.164 161.44.129.2**

DETAILED STEPS

	Command or Action	Purpose
Step 1	Router(config-if)# **configure terminal**	Enters global configuration mode.
Step 2	Router(config)# **ip rsvp policy cops 40 160 servers 161.44.130.164 161.44.129.2**	Tells the router to apply RSVP policy to messages that match ACLs 40 and 160, and specifies the servers for those sessions.

Rejecting Unmatched RSVP Messages

To reject unmatched RSVP messages, use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy default-reject**

DETAILED STEPS

Command or Action	Purpose
Step 1 Router(config-if)# **configure terminal**	Enters global configuration mode.
Step 2 Router(config)# **ip rsvp policy default-reject**	Tells the router to reject unmatched PATH and RESV messages, instead of just letting them pass through unadjudicated.

Confining Policy to PATH and RESV Messages

To confine policy to PATH and RESV messages, use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy cops minimal**

DETAILED STEPS

Command or Action	Purpose
Step 1 Router(config-if)# **configure terminal**	Enters global configuration mode.
Step 2 Router(config)# **ip rsvp policy cops minimal**	Tells the router to adjudicate only PATH and RESV messages, and to accept and pass onward PATH ERROR, RESV ERROR, and RESV CONFIRM messages.

Retaining RSVP Information After Losing Connection with the COPS Server

To retain RSVP information after losing connection with the COPS server, use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy cops timeout 600**

DETAILED STEPS

Command or Action	Purpose
Step 1 Router(config-if)# **configure terminal**	Enters global configuration mode.

	Command or Action	Purpose
Step 2	Router(config)# **ip rsvp policy cops timeout 600**	Tells the router to hold policy information for 10 minutes (600 seconds) while attempting to reconnect to a COPS server.

Reporting the Results of Outsourcing and Configuration Decisions

To report the results of outsourcing and configuration decisions, use the following commands beginning in interface configuration mode:

SUMMARY STEPS

1. Router(config-if)# **configure terminal**
2. Router(config)# **ip rsvp policy cops report-all**

DETAILED STEPS

	Command or Action	Purpose
Step 1	Router(config-if)# **configure terminal**	Enters global configuration mode.
Step 2	Router(config)# **ip rsvp policy cops report-all**	Tells the router to report to the Policy Decision Point (PDP) the success or failure of outsourcing and configuration decisions.

Verifying the Configuration

To verify the COPS for RSVP configuration, use the following commands in EXEC mode, as needed:

Command	Purpose
Router# **show cops servers**	Displays server addresses, port, state, keepalives, and policy client information.
Router# **show ip rsvp policy cops**	Displays policy server addresses, ACL IDs, and client/server connection status.
Router# **show ip rsvp policy**	Displays ACL IDs and their connection status.

COPS for RSVP Configuration Examples

Examples COPS Server Specified

The following example specifies the COPS server and enables COPS for RSVP on the server. Both of these functions are accomplished by using the **ip rsvp policy cops** command. By implication, the default settings for all remaining COPS for RSVP commands are accepted.

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# ip rsvp policy cops servers 161.44.130.168 161.44.129.6
Router(config)# exit
```

Example RSVP Behavior Customized

Once the COPS server has been specified and COPS for RSVP has been enabled, the remaining COPS for RSVP commands can be used to customize the COPS for RSVP behavior of the router. The following example uses the remaining COPS for RSVP commands to customize the RSVP behavior of the router:

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# ip rsvp policy cops 40 160 servers 161.44.130.168 161.44.129.6
Router(config)# ip rsvp policy default-reject
Router(config)# ip rsvp policy cops minimal
Router(config)# ip rsvp policy cops timeout 600
Router(config)# ip rsvp policy cops report-all
Router(config)# exit
```

Example Verification of the COPS for RSVP Configuration

The following examples display three views of the COPS for RSVP configuration on the router, which can be used to verify the COPS for RSVP configuration.

This example displays the policy server address, state, keepalives, and policy client information:

```
Router# show cops servers
COPS SERVER: Address: 161.44.135.172. Port: 3288. State: 0. Keepalive: 120 sec
Number of clients: 1. Number of sessions: 1.
    COPS CLIENT: Client type: 1.  State: 0.
```

This example displays the policy server address, the ACL ID, and the client/server connection status:

```
Router# show ip rsvp policy cops
COPS/RSVP entry. ACLs: 40 60
PDPs: 161.44.135.172
Current state: Connected
Currently connected to PDP 161.44.135.172, port 0
```

This example displays the ACL ID numbers and the status for each ACL ID:

```
Router# show ip rsvp policy
Local policy: Currently unsupported
COPS:
ACLs: 40 60 . State: CONNECTED.
ACLs: 40 160 . State: CONNECTING.
```