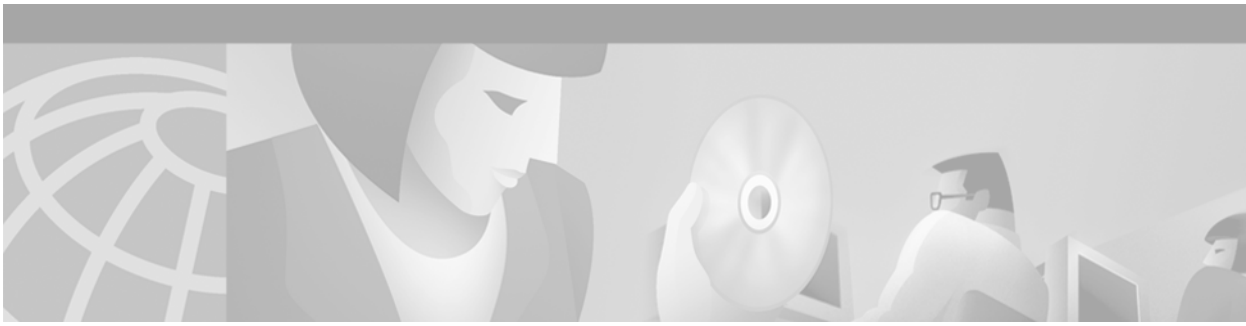

Configuring Subnetwork Bandwidth Manager

This chapter describes the tasks for configuring the Subnetwork Bandwidth Manager (SBM) feature, which is a signalling feature that enables Resource Reservation Protocol (RSVP)-based admission control over IEEE 802-styled networks.

For complete conceptual information, see the section "Subnetwork Bandwidth Manager" in the chapter "Signalling Overview" in this book.

For a complete description of the SBM 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.

To identify the hardware platform or software image information associated with a feature, use the Feature Navigator on Cisco.com to search for information about the feature or refer to the software release notes for a specific release. For more information, see the "Identifying Supported Platforms" section in the "Using Cisco IOS Software" chapter in this book.

Subnetwork Bandwidth Manager Configuration Task List

To configure SBM, perform the tasks described in the following sections. The task in the first section is required; the tasks in the remaining sections are optional.

- Configuring an Interface as a Designated SBM Candidate (Required)
- Configuring the NonResvSendLimit Object (Optional)
- Verifying Configuration of SBM State (Optional)

See the end of this chapter for the section "Subnetwork Bandwidth Manager Candidate Configuration Example."

Configuring an Interface as a Designated SBM Candidate

SBM is used in conjunction with RSVP. Therefore, before you configure an interface as a Designated SBM (DSBM) contender, ensure that RSVP is enabled on that interface.

To configure the interface as a DSBM candidate, use the following command in interface configuration mode:

Command	Purpose
`Router(config-if)# ip rsvp dsbm candidate [priority]`	Configures the interface to participate as a contender in the DSBM dynamic election process, whose winner is based on the highest priority.

Configuring the NonResvSendLimit Object

The NonResvSendLimit object specifies how much traffic can be sent onto a managed segment without a valid RSVP reservation.

To configure the NonResvSendLimit object parameters, use the following commands in interface configuration mode, as needed:

Command	Purpose
`Router(config-if)# ip rsvp dsbm non-resv-send-limit rate kBps`	Configures the average rate, in kbps, for the DSBM candidate.
`Router(config-if)# ip rsvp dsbm non-resv-send-limit burst kilobytes`	Configures the maximum burst size, in KB, for the DSBM candidate.
`Router(config-if)# ip rsvp dsbm non-resv-send-limit peak kBps`	Configures the peak rate, in kbps, for the DSBM candidate.
`Router(config-if)# ip rsvp dsbm non-resv-send-limit min-unit bytes`	Configures the minimum policed unit, in bytes, for the DSBM candidate.
`Router(config-if)# ip rsvp dsbm non-resv-send-limit max-unit bytes`	Configures the maximum packet size, in bytes, for the DSBM candidate.

To configure the per-flow limit on the amount of traffic that can be sent without a valid RSVP reservation, configure the **rate**, **burst**, **peak**, **min-unit**, and **max-unit** keywords for finite values from 0 to infinity.

To allow all traffic to be sent without a valid RSVP reservation, configure the **rate**, **burst**, **peak**, **min-unit**, and **max-unit** keywords for unlimited. To configure the parameters for unlimited, you can either omit the command or enter the **no** version of the command (for example, **no ip rsvp dsbm non-resv-send-limit rate**). Unlimited is the default value.

The absence of the NonResvSendLimit object allows any amount of traffic to be sent without a valid RSVP reservation.

Verifying Configuration of SBM State

To display information that enables you to determine if an interface has been configured as a DSBM candidate and which of the contenders has been elected the DSBM, use the following command in EXEC mode:

Command	Purpose
Router# **show ip rsvp sbm** [**detail**] [*interface*]	Displays information about an SBM configured for a specific RSVP-enabled interface or for all RSVP-enabled interfaces on the router. Using the **detail** keyword allows you to view the values for the NonResvSendLimit object.

The displayed output from the **show ip rsvp sbm** command identifies the interface by name and IP address, and it shows whether the interface has been configured as a DSBM contender. If the interface is a contender, the DSBM Priority field displays its priority. The DSBM election process is dynamic, addressing any new contenders configured as participants. Consequently, at any given time, an incumbent DSBM might be replaced by one configured with a higher priority. The following example shows sample output from the **show ip rsvp sbm** command:

```
Router# show ip rsvp sbm

Interface DSBM Addr      DSBM Priority    DSBM Candidate   My Priority
Et1       1.1.1.1        70               yes              70
Et2       145.2.2.150    100              yes              100
```

If you use the **detail** keyword, the output is shown in a different format. In the left column, the local DSBM candidate configuration is shown; in the right column, the corresponding information for the current DSBM is shown. In the following example, the local DSBM candidate won election and is the current DSBM:

```
Router# show ip rsvp sbm detail

Interface:Ethernet2
Local Configuration             Current DSBM
  IP Address:10.2.2.150         IP Address:10.2.2.150
  DSBM candidate:yes             I Am DSBM:yes
  Priority:100                   Priority:100
  Non Resv Send Limit             Non Resv Send Limit
    Rate:500 Kbytes/sec             Rate:500 Kbytes/sec
    Burst:1000 Kbytes               Burst:1000 Kbytes
    Peak:500 Kbytes/sec             Peak:500 Kbytes/sec
    Min Unit:unlimited              Min Unit:unlimited
    Max Unit:unlimited              Max Unit:unlimited
```

Subnetwork Bandwidth Manager Candidate Configuration Example

For information about configuring SBM, see the section "Subnetwork Bandwidth Manager Configuration Task List" in this chapter.

In the following example, RSVP and SBM are enabled on Ethernet interface 2. After RSVP is enabled, the interface is configured as a DSBM and SBM candidate with a priority of 100. The configured priority is high, making this interface a good contender for DSBM status. However, the maximum configurable priority value is 128, so another interface configured with a higher priority could win the election and become the DSBM.

```
interface Ethernet2
 ip address 145.2.2.150 255.255.255.0
 no ip directed-broadcast
 ip pim sparse-dense-mode
 no ip mroute-cache
 media-type 10BaseT
 ip rsvp bandwidth 7500 7500
 ip rsvp dsbm candidate 100
 ip rsvp dsbm non-resv-send-limit rate 500
 ip rsvp dsbm non-resv-send-limit burst 1000
 ip rsvp dsbm non-resv-send-limit peak 500
end
```