



Configuring Subnetwork Bandwidth Manager

This chapter describes how to configure the Subnetwork Bandwidth Manager (SBM) feature, which is a signalling feature that enables 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.

Subnetwork Bandwidth Manager Configuration Task List

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

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

SBM is not supported currently on Token Ring LANs.

See the end of this chapter for the section “SBM Candidate Configuration Example.”

Configuring an Interface as a DSBM Candidate

SBM is used in conjunction with Resource Reservation Protocol (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 [<i>priority</i>]	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:

Command	Purpose
Router(config-if)# ip rsvp dsbm non-resv-send-limit rate <i>kBps</i>	Configures the average rate (in kbps) for the DSBM candidate.
Router(config-if)# ip rsvp dsbm non-resv-send-limit burst <i>kilobytes</i>	Configures the maximum burst size (in KB) for the DSBM candidate.
Router(config-if)# ip rsvp dsbm non-resv-send-limit peak <i>kBps</i>	Configures the peak rate (in kbps) for the DSBM candidate.
Router(config-if)# ip rsvp dsbm non-resv-send-limit min-unit <i>bytes</i>	Configures the minimum policed unit (in bytes) for the DSBM candidate.
Router(config-if)# ip rsvp dsbm non-resv-send-limit max-unit <i>bytes</i>	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 **rate**, **burst**, **peak**, **min-unit**, and **max-unit** 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** values 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] [<i>interface</i>]	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.

```
router1# 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 example shown below, the local DSBM candidate won election and is the current DSBM.

```
router1# 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
```

SBM Candidate Configuration Example

In the following example, RSVP and SBM are enabled on an Ethernet2 interface. 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
```

