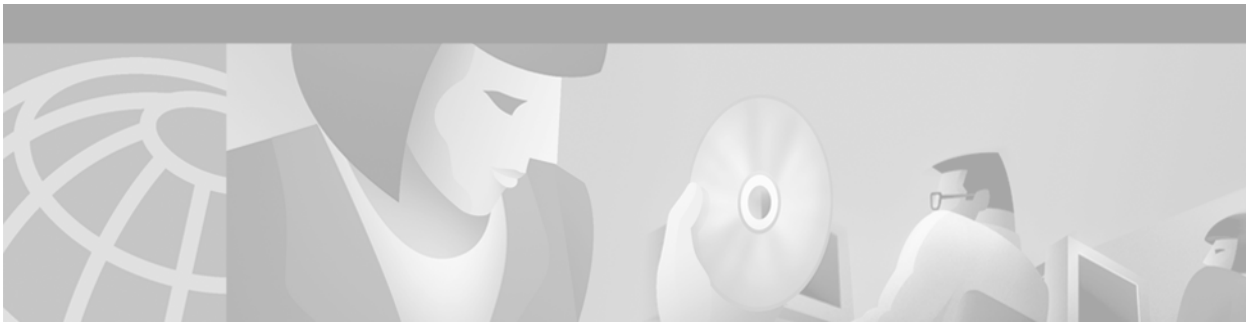

Configuring PGM Router Assist

This chapter describes the PGM Router Assist feature, which allows Cisco routers to support optimal operation of Pragmatic General Multicast (PGM). The PGM Reliable Transport Protocol itself is implemented on the customer's hosts.

For a complete description of the PGM Router Assist commands in this chapter, refer to the "PGM Router Assist Commands" chapter of the *Cisco IOS IP and IP Routing Command Reference* publication.

PGM is a reliable multicast transport protocol for applications that require ordered, duplicate-free, multicast data delivery from multiple sources to multiple receivers. PGM guarantees that a receiver in a multicast group either receives all data packets from transmissions and retransmissions, or can detect unrecoverable data packet loss. PGM is intended as a solution for multicast applications with basic reliability requirements. It is network layer-independent; the Cisco implementation of PGM Router Assist supports PGM over IP.

This feature uses a transport session identifier (TSI) that identifies a particular PGM session.

For information on PGM Reliable Transport Protocol, refer to the Internet Draft *PGM Reliable Transport Protocol Specification*.

Benefits

Saves Bandwidth

The PGM Router Assist feature saves bandwidth by substantially reducing the number of negative acknowledgments (NAKs) to the source and by constraining the retransmissions to only those receivers that experience data loss.

Improves PGM Efficiency

The PGM Router Assist feature is not absolutely required for hosts that implement PGM, but PGM operates optimally in conjunction with routers that have this feature enabled.

Restrictions

Configuring this feature on an interface causes the router to maintain PGM retransmit state on that interface. The amount of memory consumed by that state depends on the loss characteristics of the network.

Prerequisites

Before you enable the PGM Router Assist feature, the following must be in place:

- PGM Reliable Transport Protocol must be implemented on hosts connected to your network.
- IP multicast must be configured on the router where you will enable the PGM Router Assist feature.
- PIM must be configured on each PGM interface.

Configuration Tasks

To configure PGM Router Assist, perform the following tasks. The first task is required; the remaining task is optional.

- Enabling PGM Router Assist
- Monitoring and Maintaining PGM Router Assist

Enabling PGM Router Assist

Enable PGM Router Assist on each interface that is to run PGM. When this feature is enabled on an interface, the router optimizes PGM by reducing the number of NAKs and by constraining the number of retransmissions. To enable this feature, use the following command in interface configuration mode:

Command	Purpose
`Router(config-if)# ip pgm router`	Enables the router to assist PGM on this interface in order for PGM to run optimally.

Monitoring and Maintaining PGM Router Assist

Command	Purpose
`Router# clear ip pgm router [[traffic [type number]] | [rtx-state [group-address]]]`	Clears the PGM traffic statistics. Use the **rtx-state** keyword to clear PGM retransmit state.
`Router# show ip pgm router [[interface [type number]] | [state [group-address]] | [traffic [type number]]] [verbose]`	Displays information about PGM traffic statistics and transport session identifier (TSI) state. The TSI is the transport-layer identifier for the source of a PGM session. Confirms that the PGM Router Assist feature is configured, although there might not be any active traffic. Use the **state** or **traffic** keywords to learn whether an interface is actively using PGM.