



## Configuring Broadcast Suppression

This chapter describes how to configure broadcast suppression on the Catalyst 6500 series switches. Releases earlier than Release 12.1(12c)E1 support broadcast suppression. Use traffic storm control with Release 12.1(12c)E1 and later releases (see [Chapter 28, “Configuring Traffic Storm Control”](#)).



### Note

For complete syntax and usage information for the commands used in this chapter, refer to the *Catalyst 6500 Series Switch Cisco IOS Command Reference* publication.

This chapter consists of these sections:

- [Understanding How Broadcast Suppression Works, page 29-1](#)
- [Broadcast Suppression Configuration Guidelines and Restrictions, page 29-2](#)
- [Enabling Broadcast Suppression, page 29-3](#)

## Understanding How Broadcast Suppression Works

Broadcast suppression prevents LAN interfaces from being disrupted by a broadcast storm. A broadcast storm occurs when broadcast or multicast packets flood the subnet, creating excessive traffic and degrading network performance. Errors in the protocol-stack implementation or in the network configuration can cause a broadcast storm.

Broadcast suppression uses filtering that measures broadcast activity in a subnet over a 1-second interval and compares the measurement with a predefined threshold. If the threshold is reached, further broadcast activity is suppressed for the duration the interval. Broadcast suppression is disabled by default.

[Figure 29-1](#) shows the broadcast traffic patterns on a LAN interface over a given interval. In this example, broadcast suppression occurs between times T1 and T2 and between T4 and T5. During those intervals, the amount of broadcast traffic exceeded the configured threshold.

**Figure 29-1 Broadcast Suppression**

The broadcast suppression threshold numbers and the time interval combination make the broadcast suppression algorithm work with different levels of granularity. A higher threshold allows more broadcast packets to pass through.

Broadcast suppression on the Catalyst 6500 series switches is implemented in hardware. The suppression circuitry monitors packets passing from a LAN interface to the switching bus. Using the Individual/Group bit in the packet destination address, the broadcast suppression circuitry determines if the packet is unicast or broadcast, keeps track of the current count of broadcasts within the 1-second interval, and when a threshold is reached, filters out subsequent broadcast packets.

Because hardware broadcast suppression uses a bandwidth-based method to measure broadcast activity, the most significant implementation factor is setting the percentage of total available bandwidth that can be used by broadcast traffic. Because packets do not arrive at uniform intervals, the 1-second interval during which broadcast activity is measured can affect the behavior of broadcast suppression.

**Note**

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Multicast traffic cannot be suppressed.

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## Broadcast Suppression Configuration Guidelines and Restrictions

Follow these guidelines and restrictions when configuring broadcast suppression:

- Broadcast suppression is supported on Layer 2 and Layer 3 LAN interfaces.
- Broadcast suppression is not supported on VLAN interfaces.
- You can specify broadcast suppression in hundredths of a percent.
- A threshold value of 0 suppresses all broadcast traffic.
- A threshold value of 100 percent does not suppress any broadcast traffic.
- The broadcast suppression configuration is cleared if you change the configuration of a LAN interface from Layer 3 to Layer 2 or from Layer 2 to Layer 3.

**Note**

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With Release 12.1(11b)E and later, when you are in configuration mode you can enter EXEC mode-level commands by entering the **do** keyword before the EXEC mode-level command.

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# Enabling Broadcast Suppression

To enable broadcast suppression, perform this task:

	Command	Purpose
Step 1	Router(config)# <b>interface</b> {{type <sup>1</sup> slot/port}   {port-channel number}}	Selects an interface to configure.
Step 2	Router(config-if)# <b>broadcast suppression threshold</b>	Enables broadcast suppression.
	Router(config-if)# <b>no broadcast suppression</b>	Disables broadcast suppression.
Step 3	Router(config-if)# <b>end</b>	Exits configuration mode.
Step 4	Router# <b>show running-config interface</b>	Verifies the configuration.

1. *type* = ethernet, fastethernet, gigabitethernet, or tengigabitethernet

When enabling broadcast suppression, you can specify the threshold in hundredths of a percent:

- Enter 0.00 to suppress all broadcasts.
- Enter 0.01 for 0.01% (1/100th percent).
- Enter 0.50 for 0.50% (one-half percent).
- Enter 1 or 1.00 for 1% (one percent).

The threshold range is 0.00–100.00.

This example shows how to enable one-quarter-percent broadcast suppression on interface FastEthernet 3/1 and verify the configuration:

```
Router# configure terminal
Router(config)# interface fastethernet 3/1
Router(config-if)# broadcast suppression 0.25
Router(config-if)# end
Router# show running-config interface fastethernet 3/1 | include suppression
  broadcast suppression 0.25
Router#
```

