Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference

Cisco NX-OS Release 6.x

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<td>show ip igmp snooping groups</td>
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Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

- **Audience**, page xi
- **Supported Switches**, page xi
- **Document Conventions**, page xii
- **Related Documentation**, page xiii
- **Obtaining Documentation and Submitting a Service Request**, page xiv

### Audience

This publication is for experienced users who configure and maintain Cisco NX-OS devices.

### Supported Switches

This section includes the following topics:

- **Cisco Nexus 5500 Platform Switches**, page xi

### Cisco Nexus 5500 Platform Switches

*Table 1* lists the Cisco switches supported in the Cisco Nexus 5500 Platform.

For more information on these switches, see the *Cisco Nexus 5500 Platform and Cisco Nexus 5000 Platform Hardware Installation Guide* available at the following URL: http://www.cisco.com/en/US/products/ps9670/tsd_products_support_series_home.html
Table 1  Supported Cisco Nexus 5500 Platform Switches

<table>
<thead>
<tr>
<th>Switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Nexus 5548P Switch</td>
<td>The Cisco Nexus 5548P switch is the first switch in the Cisco Nexus 5500 Platform. It is a one-rack-unit (1 RU), 10-Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) switch that offers up to 960-Gbps throughput and up to 48 ports.</td>
</tr>
<tr>
<td>Cisco Nexus 5596P Switch</td>
<td>The Cisco Nexus 5596P switch is a top-of-rack, 10-Gigabit Ethernet and FCoE switch offering up to 1920-Gigabit throughput and up to 96 ports.</td>
</tr>
</tbody>
</table>

Document Conventions

Command descriptions use these conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>boldface font</td>
<td>Commands and keywords are in boldface.</td>
</tr>
<tr>
<td>italic font</td>
<td>Arguments for which you supply values are in italics.</td>
</tr>
<tr>
<td>[   ]</td>
<td>Elements in square brackets are optional.</td>
</tr>
<tr>
<td>{x</td>
<td>y</td>
</tr>
<tr>
<td>[ x</td>
<td>y</td>
</tr>
<tr>
<td>string</td>
<td>A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.</td>
</tr>
</tbody>
</table>

Screen examples use these conventions:

<table>
<thead>
<tr>
<th>screen font</th>
<th>Terminal sessions and information that the switch displays are in screen font.</th>
</tr>
</thead>
<tbody>
<tr>
<td>boldface screen font</td>
<td>Information you must enter is in boldface screen font.</td>
</tr>
<tr>
<td>italic screen font</td>
<td>Arguments for which you supply values are in italic screen font.</td>
</tr>
<tr>
<td>&lt;  &gt;</td>
<td>Nonprinting characters, such as passwords, are in angle brackets.</td>
</tr>
<tr>
<td>[   ]</td>
<td>Default responses to system prompts are in square brackets.</td>
</tr>
<tr>
<td>!, #</td>
<td>An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.</td>
</tr>
</tbody>
</table>

This document uses the following conventions:

Note | Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.
Related Documentation

Documentation for Cisco Nexus 5000 Series Switches and Cisco Nexus 2000 Series Fabric Extender is available at the following URL:


The following are related Cisco Nexus 5000 Series and Cisco Nexus 2000 Series Fabric Extender documents:

Release Notes

Cisco Nexus 5500 Series Release Notes

Configuration Guides

Cisco Nexus 5500 Series Configuration Limits for Cisco NX-OS Release 6.0(2)N1(1)
Cisco Nexus 5500 Series NX-OS Fibre Channel over Ethernet Configuration Guide
Cisco Nexus 5500 Series NX-OS Layer 2 Switching Configuration Guide
Cisco Nexus 5500 Series NX-OS Multicast Routing Configuration Guide
Cisco Nexus 5500 Series NX-OS Quality of Service Configuration Guide
Cisco Nexus 5500 Series NX-OS SAN Switching Configuration Guide
Cisco Nexus 5500 Series NX-OS Security Configuration Guide
Cisco Nexus 5000 Series NX-OS System Management Configuration Guide
Cisco Nexus 5500 Series NX-OS Unicast Routing Configuration Guide
Cisco Nexus 5500 Series NX-OS Fundamentals Configuration Guide

Maintain and Operate Guides

Cisco Nexus 5500 Series NX-OS Operations Guide

Installation and Upgrade Guides

Cisco Nexus 5500 Platform Hardware Installation Guide
Cisco Nexus 5500 Series NX-OS Software Upgrade and Downgrade Guide
Regulatory Compliance and Safety Information for the Cisco Nexus 5500 Series Switches
Chapter

Licensing Guide

Cisco NX-OS Licensing Guide

Command References

Cisco Nexus 5500 Series NX-OS Fibre Channel Command Reference
Cisco Nexus 5500 Series NX-OS Fundamentals Command Reference
Cisco Nexus 5500 Series NX-OS Layer 2 Interfaces Command Reference
Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference
Cisco Nexus 5500 Series NX-OS QoS Command Reference
Cisco Nexus 5500 Series NX-OS Security Command Reference
Cisco Nexus 5500 Series NX-OS System Management Command Reference
Cisco Nexus 5500 Series NX-OS Unicast Routing Command Reference

Error and System Messages

Cisco NX-OS System Messages Reference

Troubleshooting Guide

Cisco Nexus 5500 Troubleshooting Guide

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What’s New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation:


Subscribe to the What’s New in Cisco Product Documentation as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.
This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference*. The latest version of this document is available at the following Cisco website:


To check for additional information about this Cisco NX-OS Release, see the *Cisco Nexus 5500 Series NX-OS Release Notes, Release 6.0* available at the following Cisco website:


### New and Changed Information for Cisco NX-OS Releases

This section includes the following topics:

- New and Changed Information for Cisco NX-OS Release 6.0(2)N1(2), page xv

### New and Changed Information for Cisco NX-OS Release 6.0(2)N1(2)

*Table 1* summarizes the new and changed features for Cisco NX-OS Release 6.0(2)N1(2) and tells you where they are documented.


<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Where Documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSFP+ GEM</td>
<td>This feature was introduced.</td>
<td>• Layer 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– I Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IGMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– C Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Show Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IGMP Snooping</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– I Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MSDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– I Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• PIM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– C Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– I Commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Show Commands</td>
</tr>
</tbody>
</table>
Layer 3 Interfaces Commands
H Commands

This chapter describes the Cisco NX-OS routing commands that begin with H.
hardware profile multicast max-limit

To set the maximum number of entries in the multicast routing table, use the `hardware profile multicast max-limit` command.

```
hardware profile multicast max-limit max-entries
```

### Syntax Description

| max-entries | Maximum number of entries in the multicast routing table. The range is from 0 to 8000. |

### Command Default

None

### Command Modes

Global configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

A reload is necessary after configuring the max-limit.

This command does not require a license.

### Examples

This example shows how to set the maximum number of entries in the multicast routing table to 3000:

```
switch(config)# hardware profile multicast max-limit 3000
Warning!!: The multicast and /32 unicast route limits have been changed.
        Any route exceeding the limit may get dropped.
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show hardware profile status</td>
<td>Displays information about the multicast routing table limits.</td>
</tr>
</tbody>
</table>
I Commands

This chapter describes the Cisco NX-OS routing commands that begin with I.
interface ethernet (Layer 3)

To configure a Layer 3 Ethernet IEEE 802.3 routed interface, use the `interface ethernet` command.

```
interface ethernet [chassis_ID|slot|QSFP-module|port|subintf-port-no]
```

**Syntax Description**

- **chassis_ID** (Optional) Specifies the Fabric Extender chassis ID. The chassis ID is from 100 to 199.
  - **Note** This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.

- **slot** Slot from 1 to 3. The following list defines the slots available:
  - Slot 1 includes all the fixed ports. A Fabric Extender only has one slot.
  - Slots 2 to 4 are hot-swappable LEMs.

- **QSFP-module** The QSFP-module number is from 1 to 4.
  - **Note** The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).

- **port** Port number within a particular slot. The port number is from 1 to 128.
  - **subintf-port-no** (Optional) Specifies the subinterface separator.

- **port** Port number for the subinterface. The range is from 1 to 48.

**Command Default** None

**Command Modes**

- Global configuration mode
- Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You must use the `no switchport` command in the interface configuration mode to configure the interface as a Layer 3 routed interface. When you configure the interface as a Layer 3 interface, all Layer 2 specific configurations on this interface are deleted.

Use the `switchport` command to convert a Layer 3 interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3 specific configurations on this interface are deleted.

**Examples**

This example shows how to enter configuration mode for a Layer 3 Ethernet interface 1/5:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
```
This example shows how to enter configuration mode for a host interface on a Fabric Extender:

```
switch(config)# interface ethernet 101/1/1
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
```

This example shows how to configure a Layer 3 subinterface for Ethernet interface 1/5 in the global configuration mode:

```
switch(config)# interface ethernet 1/5.2
switch(config-if)# no switchport
switch(config-subif)# ip address 10.1.1.1/24
```

This example shows how to configure a Layer 3 subinterface in interface configuration mode:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# interface ethernet 1/5.1
switch(config-subif)# ip address 10.1.1.1/24
```

This example shows how to convert a Layer 3 interface to a Layer 2 interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)# switchport
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bandwidth</td>
<td>Sets the bandwidth parameters for an interface.</td>
</tr>
<tr>
<td>delay</td>
<td>Configures the interface throughput delay value.</td>
</tr>
<tr>
<td>encapsulation</td>
<td>Sets the encapsulation type for an interface.</td>
</tr>
<tr>
<td>ip address</td>
<td>Sets a primary or secondary IP address for an interface.</td>
</tr>
<tr>
<td>inherit</td>
<td>Assigns a port profile to an interface.</td>
</tr>
<tr>
<td>interface vethernet</td>
<td>Configures a virtual Ethernet interface.</td>
</tr>
<tr>
<td>no switchport</td>
<td>Configures an interface as a Layer 3 interface.</td>
</tr>
<tr>
<td>service-policy</td>
<td>Configures a service policy for an interface.</td>
</tr>
<tr>
<td>show fex</td>
<td>Displays all configured Fabric Extender chassis connected to the switch.</td>
</tr>
<tr>
<td>show interface ethernet</td>
<td>Displays various parameters of an Ethernet IEEE 802.3 interface.</td>
</tr>
</tbody>
</table>
interface loopback

To create a loopback interface and enter interface configuration mode, use the `interface loopback` command. To remove a loopback interface, use the `no` form of this command.

```
interface loopback number
no interface loopback number
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>Interface number; valid values are from 0 to 1023.</td>
</tr>
</tbody>
</table>

**Command Default**
None

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

Use the `interface loopback` command to create or modify loopback interfaces.

From the loopback interface configuration mode, the following parameters are available:

- **description**—Provides a description of the purpose of the interface.
- **ip**—Configures IP features, such as the IP address for the interface, Address Resolution Protocol (ARP) attributes, load balancing, Unicast Reverse Path Forwarding (RPF) or IP Source Guard.
- **logging**—Configure logging of events.
- **shutdown**—Shut down traffic on the interface.

This command does not require a license.

**Examples**

This example shows how to create a loopback interface:

```
switch(config)# interface loopback 50
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show interface loopback</td>
<td>Displays information about the traffic on the specified loopback interface.</td>
</tr>
</tbody>
</table>
interface port-channel

To create an EtherChannel interface and enter interface configuration mode, use the interface port-channel command. To remove an EtherChannel interface, use the no form of this command.

```
interface port-channel channel-number[.sub intf-channel-no]
no interface port-channel channel-number[.sub intf-channel-no]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channel-number</td>
<td>Channel number that is assigned to this EtherChannel logical interface. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>.</td>
<td>(Optional) Specifies the subinterface separator.</td>
</tr>
<tr>
<td>sub intf-channel-no</td>
<td>(Optional) Port number of the EtherChannel subinterface. The range is from 1 to 4093.</td>
</tr>
</tbody>
</table>

| Note | Applies to Layer 3 interfaces. |

### Command Default

None

### Command Modes

- Global configuration mode
- Interface configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

A port can belong to only one channel group.

When you use the `interface port-channel` command for Layer 2 interfaces, follow these guidelines:

- If you are using CDP, you must configure it only on the physical interface and not on the EtherChannel interface.
- If you do not assign a static MAC address on the EtherChannel interface, a MAC address is automatically assigned. If you assign a static MAC address and then later remove it, the MAC address is automatically assigned.
- The MAC address of the EtherChannel is the address of the first operational port added to the channel group. If this first-added port is removed from the channel, the MAC address comes from the next operational port added, if there is one.

You must use the `no switchport` command in the interface configuration mode to configure the EtherChannel interface as a Layer 3 interface. When you configure the interface as a Layer 3 interface, all Layer 2 specific configurations on this interface are deleted.

Use the `switchport` command to convert a Layer 3 EtherChannel interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3 specific configurations on this interface are deleted.
You can configure one or more subinterfaces on a port channel made from routed interfaces.

**Examples**

This example shows how to create an EtherChannel group interface with channel-group number 50:

```plaintext
switch(config)# interface port-channel 50
switch(config-if)#
```

This example shows how to create a Layer 3 EtherChannel group interface with channel-group number 10:

```plaintext
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# ip address 192.0.2.1/24
switch(config-if)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 1 in interface configuration mode:

```plaintext
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# interface port-channel 10.1
switch(config-subif)# ip address 192.0.2.2/24
switch(config-subif)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 20.1 in global configuration mode:

```plaintext
switch(config)# interface port-channel 20.1
switch(config-subif)# ip address 192.0.2.3/24
switch(config-subif)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>encapsulation</td>
<td>(Layer 3 interfaces) Sets the encapsulation type for an interface.</td>
</tr>
<tr>
<td>ip address</td>
<td>(Layer 3 interfaces) Sets a primary or secondary IP address for an interface.</td>
</tr>
<tr>
<td>no switchport</td>
<td>(Layer 3 interfaces) Configures an interface as a Layer 3 interface.</td>
</tr>
<tr>
<td>show interface</td>
<td>Displays configuration information about interfaces.</td>
</tr>
<tr>
<td>show lacp</td>
<td>Displays LACP information.</td>
</tr>
<tr>
<td>show port-channel</td>
<td>Displays information on the EtherChannels.</td>
</tr>
<tr>
<td>vtp (interface)</td>
<td>Enables VLAN Trunking Protocol (VTP) on an interface.</td>
</tr>
</tbody>
</table>
N Commands

This chapter describes the Cisco NX-OS routing commands that begin with N.
### no switchport

To configure the interface as a Layer 3 Ethernet interface, use the **no switchport** command.

```
no switchport
```

#### Syntax Description
This command has no arguments or keywords.

#### Command Default
None

#### Command Modes
Interface configuration mode

#### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

#### Usage Guidelines
You can configure any Ethernet port as a routed interface. When you configure an interface as a Layer 3 interface, any configuration specific to Layer 2 on this interface is deleted.

If you want to configure a Layer 3 interface for Layer 2, enter the **switchport** command. Then, if you change a Layer 2 interface to a routed interface, enter the **no switchport** command.

#### Examples
This example shows how to enable an interface as a Layer 3 routed interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)#
```

This example shows how to configure a Layer 3 interface as a Layer 2 interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# switchport
switch(config-if)#
```

#### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>copy running-config</td>
<td>Saves the running configuration to the startup configuration file.</td>
</tr>
<tr>
<td>startup-config</td>
<td></td>
</tr>
<tr>
<td>ip address</td>
<td>Sets a primary or secondary IP address for an interface.</td>
</tr>
<tr>
<td>show interfaces</td>
<td>Displays interface information.</td>
</tr>
</tbody>
</table>
IGMP Commands
This chapter describes the Cisco NX-OS IGMP commands that begin with C.
clear ip igmp event-history

To clear information in the IGMP event history buffers, use the `clear ip igmp event-history` command.

```
clear ip igmp event-history { cli | debugs | errors | events | ha | igmp-internal | mtrace | policy | vrf }
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cli</td>
<td>Clears the CLI event history buffer.</td>
</tr>
<tr>
<td>debugs</td>
<td>Clears the debug event history buffer.</td>
</tr>
<tr>
<td>events</td>
<td>Clears the event history buffer.</td>
</tr>
<tr>
<td>ha</td>
<td>Clears the high availability (HA) event history buffer.</td>
</tr>
<tr>
<td>igmp-internal</td>
<td>Clears the IGMP internal event history buffer.</td>
</tr>
<tr>
<td>mtrace</td>
<td>Clears the mtrace event history buffer.</td>
</tr>
<tr>
<td>policy</td>
<td>Clears the policy event history buffer.</td>
</tr>
<tr>
<td>vrf</td>
<td>Clears the virtual routing and forwarding (VRF) event history buffer.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to clear information in the IGMP HA event history buffer:

```
switch(config)# clear ip igmp event-history ha
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip igmp event-history</td>
<td>Configures the size of the IGMP event history buffers.</td>
</tr>
</tbody>
</table>
clear ip igmp groups

To clear IGMP-related information in the IPv4 multicast routing table, use the clear ip igmp groups command.

```
clear ip igmp groups { * | group [source] | group-prefix } [vrf { vrf-name | all | default | management }]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Specifies all routes.</td>
</tr>
<tr>
<td>group</td>
<td>Group address in the format A.B.C.D.</td>
</tr>
<tr>
<td>source</td>
<td>(Optional) Source (S, G) route.</td>
</tr>
<tr>
<td>group-prefix</td>
<td>Group prefix in the format A.B.C.D/length.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The clear ip igmp route command is an alternative form of this command.

This command does not require a license.

**Examples**

This example shows how to clear all the IGMP-related routes in the IPv4 multicast routing table:

```
switch(config)# clear ip igmp groups *
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip igmp route</td>
<td>Clears IGMP-related information in the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>show ip mroute</td>
<td>Displays information about the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>
clear ip igmp interface statistics

To clear the IGMP statistics for an interface, use the `clear ip igmp interface statistics` command.

```
clear ip igmp interface statistics [ethernet slot[/QSFP-module/]port | loopback if_number | port-channel number | sub_if_number]
```

### Syntax Description

- **ethernet slot[/QSFP-module/]port**
  - (Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The **QSFP-module number** is from 1 to 4. The port number is from 1 to 128.
  - **Note**: The **QSFP-module number** applies only to the QSFP+ Generic Expansion Module (GEM).

- **loopback if_number**
  - (Optional) Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- **port-channel number**
  - (Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **sub_if_number**
  - (Optional) Subinterface number. The range is from 1 to 4093.

### Command Default
None

### Command Modes
Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines
This command does not require a license.

### Examples

This example shows how to clear IGMP statistics for an interface:

```
switch# clear ip igmp interface statistics ethernet 2/1
switch#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays information about IGMP interfaces.</td>
</tr>
</tbody>
</table>
clear ip igmp route

To clear IGMP-related information in the IPv4 multicast routing table, use the clear ip igmp route command.

```
clear ip igmp route { * | group [source] | group-prefix} [vrf {vrf-name | all | default | management}]
```

**Syntax Description**

- **Syntax Description**
  - `*` Specifies all routes.
  - `group` Group address in the format `A.B.C.D`.
  - `source` (Optional) Source (S, G) route.
  - `group-prefix` Group prefix in the format `A.B.C.D/length`.
  - `vrf` (Optional) Clears the virtual routing and forwarding (VRF) instance information.
  - `vrf-name` VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
  - `all` Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
  - `default` Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
  - `management` Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The clear ipigmp groups command is an alternative form of this command.

This command does not require a license.

**Examples**

This example shows how to clear all the IGMP-related routes in the IPv4 multicast routing table:

```
switch(config)# clear ip igmp route *
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip igmp groups</td>
<td>Clears IGMP-related information in the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>show ip mroute</td>
<td>Displays information about the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>
clear ip igmp route
I Commands

This chapter describes the Cisco NX-OS IGMP commands that begin with I.
ip igmp access-group

To enable a route-map policy to control the multicast groups that hosts on the subnet serviced by an interface can join, use the `ip igmp access-group` command. To disable the route-map policy, use the `no` form of this command.

```
ip igmp access-group policy-name

no ip igmp access-group [policy-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Policy-Name</th>
<th>Route-map policy name. The route map name can be a maximum of 100 alphanumeric characters.</th>
</tr>
</thead>
</table>

**Command Default**

Disabled

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `ip igmp access-group` command is an alias of the `ip igmp report-policy` command. This command does not require a license.

**Examples**

This example shows how to enable a route-map policy:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp access-group my_access_group_policy
switch(config-if)#
```

This example shows how to disable a route-map policy:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp access-group
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp enforce-router-alert

To enable the enforce router alert option check for IGMPv2 and IGMPv3 packets, use the ip igmp enforce-router-alert command. To disable the option check, use the no form of this command.

    ip igmp enforce-router-alert
    no ip igmp enforce-router-alert

Syntax Description
This command has no arguments or keywords.

Command Default
Enabled

Command Modes
Global configuration mode

Command History
Release                Modification
5.2(1)N1(1)            This command was introduced.

Usage Guidelines
This command does not require a license.

Examples
This example shows how to enable the enforce router alert option check:
switch(config)# ip igmp enforce-router-alert

This example shows how to disable the enforce router alert option check:
switch(config)# no ip igmp enforce-router-alert

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-config igmp</td>
<td>Displays information about the IGMP running-system configuration.</td>
</tr>
</tbody>
</table>
ip igmp event-history

To configure the size of the IGMP event history buffers, use the ip igmp event-history command. To revert to the default buffer size, use the no form of this command.

```
ip igmp event-history { cli | group-debug | group-events | ha | igmp-internal | interface-debug | interface-events | msgs | mtrace | policy | statistics | vrf } size buffer-size
no ip igmp event-history { cli | group-debug | group-events | ha | igmp-internal | interface-debug | interface-events | msgs | mtrace | policy | statistics | vrf } size buffer-size
```

**Syntax Description**

- **cli** Configures the IGMP CLI event history buffer size.
- **group-debug** Configures the IGMP group debug event history buffer size.
- **group-events** Configures the IGMP group-event event history buffer size.
- **ha** Configures the IGMP HA event history buffer size.
- **igmp-internal** Configures the IGMP IGMP-internal event history buffer size.
- **interface-debug** Configures the IGMP interface debug event history buffer size.
- **interface-events** Configures the IGMP interface-event event history buffer size.
- **msgs** Configures the message event history buffer size.
- **mtrace** Configures the IGMP mtrace event history buffer size.
- **policy** Configures the IGMP policy event history buffer size.
- **statistics** Configures the statistics event history buffer size.
- **vrf** Configures the IGMP VRF event history buffer size.
- **size** Specifies the size of the buffer to allocate.
- **buffer-size** Buffer size that is one of the following values: **disabled**, **large**, **medium**, or **small**. The default buffer size is **small**.

**Command Default**

All history buffers are allocated as small.

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure the IGMP HA event history buffer size:
switch(config)# ip igmp event-history ha size large
switch(config)#

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>clear ip igmp event-history</td>
<td>Clears the contents of IGMP event history buffers.</td>
</tr>
<tr>
<td></td>
<td>show ip igmp event-history</td>
<td>Displays information in the IGMP event history buffers.</td>
</tr>
<tr>
<td></td>
<td>show running-config igmp</td>
<td>Displays information about the IGMP running-system configuration.</td>
</tr>
</tbody>
</table>
ip igmp flush-routes

To remove routes when the IGMP process is restarted, use the `ip igmp flush-routes` command. To leave routes in place, use the `no` form of this command.

```
ip igmp flush-routes
    no ip igmp flush-routes
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
The routes are not flushed.

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
To display whether flush routes are configured, use this command line:

```
switch(config)# show running-config | include flush-routes
```

This command does not require a license.

**Examples**
This example shows how to remove routes when the IGMP process is restarted:

```
switch(config)# ip igmp flush-routes
```

This example shows how to leave routes in place when the IGMP process is restarted:

```
switch(config)# no ip igmp flush-routes
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show running-config</code></td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip igmp group-timeout

To configure a group membership timeout for IGMPv2, use the `ip igmp group-timeout` command. To return to the default timeout, use the `no` form of this command.

```
  ip igmp group-timeout timeout
  no ip igmp group-timeout [timeout]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>timeout</code></td>
<td>Timeout in seconds. The range is from 3 to 65,535. The default is 260.</td>
</tr>
</tbody>
</table>

**Command Default**

The group membership timeout is 260 seconds.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a group membership timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp group-timeout 200
switch(config-if)#
```

This example shows how to reset a group membership timeout to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp group-timeout
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp immediate-leave

To enable the device to remove the group entry from the multicast routing table immediately upon receiving a leave message for the group, use the `ip igmp immediate-leave` command. To disable the immediate leave option, use the `no` form of this command.

```
ip igmp immediate-leave
no ip igmp immediate-leave
```

Syntax Description
This command has no arguments or keywords.

Command Default
The immediate leave feature is disabled.

Command Modes
Interface configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
Use the `ip igmp immediate-leave` command only when there is one receiver behind the interface for a given group.

This command does not require a license.

Examples
This example shows how to enable the immediate leave feature:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp immediate-leave
```

This example shows how to disable the immediate leave feature:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp immediate-leave
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp join-group

To statically bind a multicast group to an interface, use the **ip igmp join-group** command. To remove a group binding, use the **no** form of this command.

```
ip igmp join-group { group [source source] | route-map policy-name }

no ip igmp join-group { group [source source] | route-map policy-name }
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>Multicast group IP address.</td>
</tr>
<tr>
<td>source source</td>
<td>(Optional) Configures a source IP address for the IGMPv3 (S,G) channel.</td>
</tr>
<tr>
<td>route-map policy-name</td>
<td>Specifies the route-map policy name that defines the group prefixes where this feature is applied. The route map name can be a maximum of 63 alphanumeric characters.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

If you specify only the group address, the (*, G) state is created. If you specify the source address, the (S, G) state is created.

If you use the route map, the only **match** command that is read from the route map is the **match ip multicast** command. You can specify the group prefix and source prefix.

**Note**

A source tree is built for the (S, G) state only if you enable IGMPv3.

**Caution**

When you enter this command, the traffic generated is handled by the device CPU, not the hardware.

This command does not require a license.

**Examples**

This example shows how to statically bind a group to an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp join-group 230.0.0.0
```

This example shows how to remove a group binding from an interface:
Switch(config)# interface ethernet 2/2
Switch(config-if)# no ip igmp join-group 230.0.0.0
Switch(config-if)#

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
<td></td>
</tr>
</tbody>
</table>
**ip igmp last-member-query-count**

To configure the number of times that the software sends an IGMP query in response to a host leave message, use the `ip igmp last-member-query-count` command. To reset the query interval to the default, use the `no` form of this command.

```
ip igmp last-member-query-count count
no ip igmp last-member-query-count [count]
```

**Syntax Description**

| count | Query count. The range is from 1 to 5. The default is 2. |

**Command Default**

The query count is 2.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a query count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp last-member-query-count 3
switch(config-if)#
```

This example shows how to reset a query count to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp last-member-query-count
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp last-member-query-response-time

To configure a query interval in which the software sends membership reports and then deletes the group state, use the \texttt{ip igmp last-member-query-response-time} command. To reset the query interval to the default, use the \texttt{no} form of this command.

\texttt{ip igmp last-member-query-response-time} \texttt{interval}

\texttt{no ip igmp last-member-query-response-time} \texttt{[interval]}

\begin{table}[h]
\begin{tabular}{|l|l|}
\hline
\textbf{Syntax Description} & \textit{interval} \quad Query interval in seconds. The range is from 1 to 25. The default is 1. \\
\hline
\end{tabular}
\end{table}

\begin{table}[h]
\begin{tabular}{|l|l|}
\hline
\textbf{Command Default} & The query interval is 1 second. \\
\hline
\textbf{Command Modes} & Interface configuration mode \\
\hline
\textbf{Command History} & Release \quad Modification \\
\hline
5.2(1)N1(1) & This command was introduced. \\
\hline
\end{tabular}
\end{table}

\begin{table}[H]
\begin{tabular}{|l|l|}
\hline
\textbf{Usage Guidelines} & This command does not require a license. \\
\hline
\textbf{Examples} & This example shows how to configure a query interval: \\
\hline
\multicolumn{2}{|l|}{\texttt{switch(config)# interface ethernet 2/2}} \\
\multicolumn{2}{|l|}{\texttt{switch(config-if)# ip igmp last-member-query-response-time 3}} \\
\multicolumn{2}{|l|}{\texttt{switch(config-if)#}} \\

This example shows how to reset a query interval to the default: \\
\multicolumn{2}{|l|}{\texttt{switch(config)# interface ethernet 2/2}} \\
\multicolumn{2}{|l|}{\texttt{switch(config-if)# no ip igmp last-member-query-response-time}} \\
\multicolumn{2}{|l|}{\texttt{switch(config-if)#}} \\
\hline
\textbf{Related Commands} & \textbf{Command} \quad \textbf{Description} \\
\hline
\multicolumn{2}{|l|}{\texttt{show ip igmp interface} \quad Displays IGMP information about the interface.} \\
\hline
\end{tabular}
\end{table}
ip igmp querier-timeout

To configure a querier timeout that the software uses when deciding to take over as the querier, use the **ip igmp querier-timeout** command. To reset to the querier timeout to the default, use the **no** form of this command.

```
ip igmp querier-timeout timeout
no ip igmp querier-timeout [timeout]
```

**Syntax Description**

```
timeout    Timeout in seconds. The range is from 1 to 65,535. The default is 255.
```

**Command Default**

The querier timeout is 255 seconds.

**Command Modes**

Interface configuration mode

**Command History**

```
Release   Modification
5.2(1)N1(1) This command was introduced.
```

**Usage Guidelines**

The **ip igmp query-timeout** command is an alternative form of this command.

This command does not require a license.

**Examples**

This example shows how to configure a querier timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp querier-timeout 200
switch(config-if)#
```

This example shows how to reset a querier timeout to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp querier-timeout
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ip igmp query-timeout</strong></td>
<td>Configures a querier timeout.</td>
</tr>
<tr>
<td><strong>show ip igmp interface</strong></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
To configure a query interval used when the IGMP process starts up, use the `ip igmp query-interval` command. To reset the query interval to the default, use the `no` form of this command.

```
ip igmp query-interval interval
no ip igmp query-interval [interval]
```

**Syntax Description**

| interval | Interval in seconds. The range is from 1 to 18,000. The default is 125. |

**Command Default**

The query interval is 125 seconds.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp query-interval 100
```

This example shows how to reset a query interval to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp query-interval
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp query-max-response-time

To configure a query maximum response time that is advertised in IGMP queries, use the `ip igmp query-max-response-time` command. To reset the response time to the default, use the `no` form of this command.

```
ip igmp query-max-response-time time

no ip igmp query-max-response-time [time]
```

### Syntax Description

| `time` | Query maximum response time in seconds. The range is from 1 to 25. The default is 10. |

### Command Default

The query maximum response time is 10 seconds.

### Command Modes

Interface configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to configure a query maximum response time:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp query-max-response-time 15
```

This example shows how to reset a query maximum response time to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp query-max-response-time
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp query-timeout

To configure a query timeout that the software uses when deciding to take over as the querier, use the `ip igmp query-timeout` command. To reset to the querier timeout to the default, use the `no` form of this command.

```
ip igmp query-timeout timeout
no ip igmp query-timeout [timeout]
```

**Syntax Description**

```
timeout  Timeout in seconds. The range is from 1 to 65,535. The default is 255.
```

**Command Default**

The query timeout is 255 seconds.

**Command Modes**

Interface configuration mode

**Command History**

```
Release    Modification
5.2(1)N1(1)  This command was introduced.
```

**Usage Guidelines**

The `ip igmp querier-timeout` command is an alternative form of this command.

This command does not require a license.

**Examples**

This example shows how to configure a querier timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp query-timeout 200
switch(config-if)#
```

This example shows how to reset a querier timeout to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp query-timeout
switch(config-if)#
```

**Related Commands**

```
Command                    Description
ip igmp querier-timeout    Configures a querier timeout.
show ip igmp interface     Displays IGMP information about the interface.
```
ip igmp report-link-local-groups

To enable IGMP to send reports for link-local groups, use the `ip igmp report-link-local-groups` command. To disable sending reports to link-local groups, use the `no` form of this command.

```
ip igmp report-link-local-groups
no ip igmp report-link-local-groups
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
Disabled

**Command Modes**
Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command does not require a license.

**Examples**
This example shows how to enable sending reports to link-local groups:
```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp report-link-local-groups
switch(config-if)#
```

This example shows how to disable sending reports to link-local groups:
```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp report-link-local-groups
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp report-policy

To enable an access policy that is based on a route-map policy for IGMP reports, use the `ip igmp report-policy` command. To disable the route-map policy, use the `no` form of this command.

```
ip igmp report-policy policy-name

no ip igmp report-policy [policy-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Command Default</th>
<th>Command Modes</th>
<th>Command History</th>
<th>Usage Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Interface configuration mode</td>
<td>Release</td>
<td>Modification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

Use the `ip igmp report-policy` command to filter incoming messages. You can configure the route map to prevent state from being created in the multicast routing table.

The `ip igmp report-policy` command is an alias of the `ip igmp access-group` command. If you use the route map, the only `match` command that is read from the route map is the `match ip multicast` command. You can specify the group prefix, group range, and source prefix to filter messages.

This command requires the Enterprise Services license.

**Examples**

This example shows how to enable an access policy for IGMP reports:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp report-policy my_report_policy
switch(config-if)#
```

This example shows how to disable an access policy for IGMP reports:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp report-policy
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp robustness-variable

To configure a robustness count that you can tune to reflect expected packet loss on a congested network, use the `ip igmp robustness-variable` command. To reset the count to the default, use the `no` form of this command.

```
ip igmp robustness-variable count

no ip igmp robustness-variable [count]
```

**Syntax Description**

| count | Robustness count. The range is from 1 to 7. The default is 2. |

**Command Default**

The robustness count is 2.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a robustness count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp robustness-variable 3
switch(config-if)#
```

This example shows how to reset a robustness count to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp robustness-variable
switch(config-if)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp ssm-translate

To translate IGMPv1 or IGMPv2 membership reports to create the (S, G) state so that the router treats them as IGMPv3 membership reports, use the `ip igmp ssm-translate` command. To remove the translation, use the `no` form of this command.

```
ip igmp ssm-translate group source

no ip igmp ssm-translate group source
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>IPv4 multicast group range. By default, the group prefix range is 232.0.0.0/8. To modify the IPv4 Protocol Independent Multicast (PIM) SSM range, see the <code>ip pim ssm range</code> command.</td>
</tr>
<tr>
<td>source</td>
<td>IP multicast address source.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

- Global configuration mode
- VRF configuration mode

**Command History**

```
Release     Modification
5.2(1)N1(1)  This command was introduced.
```

**Usage Guidelines**

To display SSM translation commands, use this command line:

```
switch(config)# show running-config | include ssm-translation
```

This command does not require a license.

**Examples**

This example shows how to configure a translation:

```
switch# configure terminal
switch(config)# ip igmp ssm-translate 232.0.0.0/8 10.1.1.1
switch(config)#
```

This example shows how to remove a translation:

```
switch# configure terminal
switch(config)# no ip igmp ssm-translate 232.0.0.0/8 10.1.1.1
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-config</td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip igmp startup-query-count

To configure the query count used when the IGMP process starts up, use the `ip igmp startup-query-count` command. To reset the query count to the default, use the `no` form of this command.

```
ip igmp startup-query-count count

no ip igmp startup-query-count [count]
```

**Syntax Description**

- **count**: Query count. The range is from 1 to 10. The default is 2.

**Command Default**

The query count is 2.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a query count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp startup-query-count 3
```

This example shows how to reset a query count to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp startup-query-count
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp startup-query-interval

To configure the query interval used when the IGMP process starts up, use the `ip igmp startup-query-interval` command. To reset the query interval to the default, use the `no` form of this command.

```
ip igmp startup-query-interval interval
no ip igmp startup-query-interval [interval]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Command Default</th>
<th>Command Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>interval</code></td>
<td>The query interval is 31 seconds.</td>
<td>Interface configuration mode</td>
</tr>
</tbody>
</table>

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a startup query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp startup-query-interval 25
```

This example shows how to reset a startup query interval to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp startup-query-interval
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp state-limit

To configure the maximum states allowed, use the `ip igmp state-limit` command. To remove the state limit, use the `no` form of this command.

```
ip igmp state-limit max-states [reserved reserve-policy max-reserved]
no ip igmp state-limit [max-states [reserved reserve-policy max-reserved]]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>max-states</code></td>
<td>Maximum states allowed. The range is from 1 to 4,294,967,295.</td>
</tr>
<tr>
<td><code>reserved</code></td>
<td>(Optional) Specifies to use the route-map policy name for the reserve policy. The route map name can be a maximum of 100 alphanumeric characters.</td>
</tr>
<tr>
<td><code>reserve-policy</code></td>
<td></td>
</tr>
<tr>
<td><code>max-reserved</code></td>
<td>(Optional) Maximum number of (*, G) and (S, G) entries allowed on the interface.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Interface configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to configure a state limit:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp state-limit 5000
```

This example shows how to remove a state limit:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip igmp state-limit
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp interface</code></td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
ip igmp static-oif

To statically bind a multicast group to the outgoing interface (OIF), which is handled by the device hardware, use the `ip igmp static-oif` command. To remove a static group, use the `no` form of this command.

```
ip igmp static-oif {group [source source] | route-map policy-name}
oip igmp static-oif {group [source source] | route-map policy-name}
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>Multicast group IPv4 address. If you specify only the group address, the (*, G) state is created.</td>
</tr>
<tr>
<td>source source</td>
<td>(Optional) Configures the source IP address for IGMPv3 and creates the (S, G) state.</td>
</tr>
<tr>
<td>route-map policy-name</td>
<td>Specifies the route-map policy name that defines the group prefixes where this feature is applied. The route map name can be a maximum of 63 alphanumeric characters.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Interface configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

Before you use this command, make sure that you enable Protocol Independent Multicast (PIM) on the interface by using the `ip pim sparse-mode` command.

This command does not require a license.

### Examples

This example shows how to statically bind a group to the OIF:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp static-oif 230.0.0.0
switch(config-if)#
```

This example shows how to remove a static binding from the OIF:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# no ip igmp static oif 230.0.0.0
switch(config-if)#
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim sparse-mode</td>
<td>Enables IPv4 PIM sparse mode on an interface.</td>
</tr>
<tr>
<td>no switchport</td>
<td>Configures the interface as a routed interface.</td>
</tr>
<tr>
<td>show ip igmp</td>
<td>Displays information about the IGMP local group membership.</td>
</tr>
<tr>
<td>local-groups</td>
<td></td>
</tr>
</tbody>
</table>
ip igmp version

To configure the IGMP version to use on an interface, use the ip igmp version command. To reset the IGMP version to the default, use the no form of this command.

```
ip igmp version version

no ip igmp version [version]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Command Default</th>
<th>Command Modes</th>
<th>Command History</th>
<th>Usage Guidelines</th>
<th>Examples</th>
</tr>
</thead>
</table>
| version            | The version number is 2. | Interface configuration mode | 5.2(1)N1(1) This command was introduced. | This command does not require a license. | This example shows how to configure the IGMP version to use on an interface:  
  switch(config)# interface ethernet 2/2  
  switch(config-if)# ip igmp version 3  
  switch(config-if)#  

This example shows how to reset the IGMP version to the default:  
switch(config)# interface ethernet 2/2  
switch(config-if)# no ip igmp version  
switch(config-if)# |

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp interface</td>
<td>Displays IGMP information about the interface.</td>
</tr>
</tbody>
</table>
Show Commands

This chapter describes the Cisco NX-OS IGMP show commands.
show ip igmp event-history

To display information in the IGMP event history buffers, use the `show ip igmp event-history` command.

```
show ip igmp event-history { clis | debugs | errors | events | ha | igmp-internal | msgs | mtrace | policy | statistics | vrf }
```

### Syntax Description

- **clis**
  - Displays events of type CLI.
- **debugs**
  - Displays events of type debug.
- **errors**
  - Displays events of type error.
- **events**
  - Displays events of type event.
- **ha**
  - Displays events of type HA.
- **igmp-internal**
  - Displays events of type IGMP internal.
- **msgs**
  - Displays events of type msg.
- **mtrace**
  - Displays events of type mtrace.
- **policy**
  - Displays events of type policy.
- **statistics**
  - Displays events of type statistics.
- **vrf**
  - Displays events of type VRF.

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to display information in the IGMP HA event history buffer:

```
switch(config)# show ip igmp event-history ha

ha events for IGMP process
2008 Apr 12 04:01:32.339950 igmp [4588]: : Router-port PSS entry for vlan 20 updated [count 0]
2008 Apr 12 04:00:05.118545 igmp [4588]: : Handling existing vlans notification
2008 Apr 12 04:00:04.824730 igmp [4588]: : PSS entry for global updated
```

switch(config)#
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip igmp event-history</td>
<td>Clears the contents of the IGMP event history buffers.</td>
</tr>
<tr>
<td>ip igmp event-history</td>
<td>Configures the size of IGMP event history buffers.</td>
</tr>
</tbody>
</table>
show ip igmp groups

To display information about IGMP-attached group membership, use the `show ip igmp groups` command.

```
show ip igmp groups [\{source [group] \} | \{group [source]\}] \{ethernet slot[\{QSFP-module\}/]port \}
\{port-channel channel-number,sub_if_number\}| \{vlan vlan-id\} \{vrf \{vrf-name \| all\}\}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>Source IP address.</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Multicast IP address of the single group to display.</td>
</tr>
<tr>
<td>ethernet</td>
<td>(Optional) Specifies the Ethernet interface and the slot number and port</td>
</tr>
<tr>
<td>slot[{QSFP-module}/port]</td>
<td>number. The slot number is from 1 to 255. The QSFP-module number is</td>
</tr>
<tr>
<td></td>
<td>from 1 to 4. The port number is from 1 to 128.</td>
</tr>
<tr>
<td></td>
<td>Note The QSFP-module number applies only to the QSFP+ Generic Expansion</td>
</tr>
<tr>
<td></td>
<td>Module (GEM).</td>
</tr>
<tr>
<td>port-channel</td>
<td>(Optional) Specifies the EtherChannel interface and EtherChannel number.</td>
</tr>
<tr>
<td>number</td>
<td>The range is from 1 to 4096.</td>
</tr>
<tr>
<td>sub_if_number</td>
<td>(Optional) Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>(Optional) Specifies the VLAN. The range is from 1 to 4094.</td>
</tr>
<tr>
<td>vrf vrf-name</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `show ip igmp route` command is an alternative form of this command.

This command does not require a license.

**Examples**

This example shows how to display information about the IGMP-attached group membership:

```
switch(config)# show ip igmp groups
IGMP Connected Group Membership for VRF "default" - 0 total entries
Type: S - Static, D - Dynamic, L - Local, T - SSM Translated
Group Address    Type Interface    Uptime   Expires   Last Reporter
```
```
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp route</code></td>
<td>Displays information about the IGMP-attached group membership.</td>
</tr>
</tbody>
</table>
show ip igmp interface

To display information about IGMP on interfaces, use the `show ip igmp interface` command.

```
show ip igmp interface [ethernet slot[QSF-module]/port | port-channel
        channel-number|.sub_if_number] | vlan vlan-id]

show ip igmp interface [brief] [vrf {vrf-name | all}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet</td>
<td>Specifies the Ethernet interface and the slot number and port number. The</td>
</tr>
<tr>
<td>slot[QSF-module]/port</td>
<td>slot number is from 1 to 255. The QSF-module number is from 1 to 4. The</td>
</tr>
<tr>
<td>port</td>
<td>port number is from 1 to 128.</td>
</tr>
<tr>
<td>port-channel number</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range</td>
</tr>
<tr>
<td></td>
<td>is from 1 to 4096.</td>
</tr>
<tr>
<td>sub_if_number</td>
<td>Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN. The range is from 1 to 4094.</td>
</tr>
<tr>
<td>brief</td>
<td>(Optional) Displays one line status per interface.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is</td>
</tr>
<tr>
<td></td>
<td>case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to display information about IGMP on an interface (if IGMP is not in vPC mode, the vPC information is not displayed):

```
switch(config)# show ip igmp interface vlan 5
IGMP Interfaces for VRF "default"
Vlan20, Interface status: protocol-down/link-down/admin-down
  IP address: 20.1.1.3, IP subnet: 20.1.1.0/24
  Active querier: 0.0.0.0
```
show ip igmp interface

This example shows how to display information about IGMP on an interface in a brief format:

switch(config)# show ip igmp interface brief
IGMP Interfaces for VRF "default", count: 1
Interface IP Address IGMP Querier Membership Count Version
Vlan20 20.1.1.3 0.0.0.0 0 v2

switch(config)#
### show ip igmp local-groups

To display information about IGMP local groups, use the `show ip igmp local-groups` command.

```
show ip igmp local-groups [ethernet slot[|QSFP-module]/port | port-channel channel-number| sub_if_number | vlan vlan-id | vrf {vrf-name | all}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
</table>
| `ethernet slot[|QSFP-module]/port` | Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.  
  **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM). |
| `port-channel number` | Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096. |
| `sub_if_number` | Subinterface number. The range is from 1 to 4093. |
| `vlan vlan-id` | Specifies the VLAN. The range is from 1 to 4094. |
| `vrf` | (Optional) Applies to a virtual routing and forwarding (VRF) instance. |
| `vrf-name` | VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive. |
| `all` | Specifies all VRFs. |

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to display information about IGMP local groups:

```
switch(config)# show ip igmp local-groups
```
show ip igmp route

To display information about the IGMP-attached group membership, use the `show ip igmp route` command.

```
show ip igmp route [{source [group]} | {group [source]}] [ethernet slot/[QSFP-module/]port | port-channel channel-number[,sub_if_number] | vlan vlan-id] [vrf [vrf-name | all]]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>Source IP address.</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Multicast IP address of single group to display.</td>
</tr>
<tr>
<td>ethernet</td>
<td>Specifies the Ethernet interface and the slot number and port number.</td>
</tr>
<tr>
<td>slot/QSFP-module/port</td>
<td>The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.</td>
</tr>
<tr>
<td>port-channel number</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>sub_if_number</td>
<td>Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN. The range is from 1 to 4094.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

- **6.0(2)N1(2)**: Support for the QSFP+ GEM was added.
- **5.2(1)N1(1)**: This command was introduced.

**Usage Guidelines**

The `show ip igmp groups` command is an alternative form of this command. This command does not require a license.

**Examples**

This example shows how to display information about the IGMP-attached group membership:

```
switch# show ip igmp route
IGMP Connected Group Membership for VRF "default" - 1 total entries
Type: S - Static, D - Dynamic, L - Local, T - SSM Translated
Group Address | Type Interface | Uptime    | Expires | Last Reporter
--------------|----------------|-----------|---------|---------------------
```
Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference

### Chapter       Show Commands

#### show ip igmp route

<table>
<thead>
<tr>
<th>Group Address</th>
<th>Source</th>
<th>Interface</th>
<th>Age</th>
<th>Last Report</th>
<th>Expires</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>230.0.0.0</td>
<td>S</td>
<td>Ethernet1/5</td>
<td>00:31:47</td>
<td>never</td>
<td>0.0.0.0</td>
<td></td>
</tr>
</tbody>
</table>

```
switch#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp groups</td>
<td>Displays information about the IGMP-attached group membership.</td>
</tr>
</tbody>
</table>
show running-config igmp

To display information about the running-system configuration for IGMP, use the show running-config igmp command.

show running-config igmp [all]

**Syntax Description**

| Syntax Description | all | (Optional) Displays configured and default information. |

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about the IGMP running-system configuration:

```
switch(config)# show running-config igmp

!Command: show running-config igmp
!Time: Fri May  2 08:05:08 2008

version 5.2(1)N1(1)

interface Ethernet1/5
  ip igmp static-oif 230.0.0.0

switch(config)#
```
show startup-config igmp

To display information about the startup-system configuration for IGMP, use the `show startup-config igmp` command.

```
show startup-config igmp [all]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>all</th>
<th>(Optional) Displays configured and default information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Default</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Command Modes</td>
<td>Any command mode</td>
<td></td>
</tr>
</tbody>
</table>

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about the IGMP startup-system configuration:

```
switch(config)# show startup-config igmp
```
IGMP Snooping Commands
C Commands

This chapter describes the Cisco NX-OS IGMP snooping commands that begin with C.
clear ip igmp snooping event-history

To clear information from IGMP snooping event history buffers, use the `clear ip igmp snooping event-history` command.

```
clear ip igmp snooping event-history { rib | vpc | igmp-snoop-internal | mfdm | mfdm-sum | vlan | vlan-events }
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rib</td>
<td>Clears the unicast Routing Information Base (RIB) event history buffer.</td>
</tr>
<tr>
<td>vpc</td>
<td>Clears the virtual port channel (vPC) event history buffer.</td>
</tr>
<tr>
<td>igmp-snoop-internal</td>
<td>Clears the IGMP snooping internal event history buffer.</td>
</tr>
<tr>
<td>mfdm</td>
<td>Clears the multicast FIB distribution (MFDM) event history buffer.</td>
</tr>
<tr>
<td>mfdm-sum</td>
<td>Clears the MFDM sum event history buffer.</td>
</tr>
<tr>
<td>vlan</td>
<td>Clears the VLAN event history buffer.</td>
</tr>
<tr>
<td>vlan-events</td>
<td>Clears the VLAN-events event history buffer.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to clear information in the IGMP snooping VLAN event history buffer:

```
switch(config)# clear ip igmp event-history vlan
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip igmp snooping event-history</td>
<td>Configures the size of the IGMP snooping event history buffers.</td>
</tr>
</tbody>
</table>
clear ip igmp snooping explicit-tracking vlan

To clear the IGMP snooping explicit host tracking information for VLANs, use the `clear ip igmp snooping explicit-tracking vlan` command.

```
clear ip igmp snooping explicit-tracking vlan vlan-id
```

### Syntax Description

- **vlan-id**
  - VLAN number. The range is from 1 to 3968 and 4049 to 4093.

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to clear the explicit tracking information for VLAN 1:

```
switch# clear ip igmp snooping explicit-tracking vlan 1
switch#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping explicit-tracking vlan</td>
<td>Displays explicit host tracking information for IGMPv3.</td>
</tr>
</tbody>
</table>
clear ip igmp snooping statistics vlan

To clear the IGMP snooping statistics for VLANs, use the **clear ip igmp snooping statistics vlan** command.

```
  clear ip igmp snooping statistics vlan [vlan-id | all]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-id</td>
<td>(Optional) VLAN number. The range is from 1 to 3968 and 4049 to 4093.</td>
</tr>
<tr>
<td>all</td>
<td>(Optional) Applies to all VLANs.</td>
</tr>
</tbody>
</table>

**Command Default**

All VLANs

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to clear IGMP snooping statistics for VLAN 1:

```
  switch# clear ip igmp snooping statistics vlan 1
  switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping statistics by VLAN.</td>
</tr>
<tr>
<td>statistics vlan</td>
<td></td>
</tr>
</tbody>
</table>
H Commands

This chapter describes the Cisco NX-OS IGMP snooping commands that begin with H.
hardware multicast snooping group-limit

To configure the number of groups learned through IGMP Snooping, use the `hardware multicast snooping group-limit` command.

```
hardware multicast snooping group-limit limit
```

**Syntax Description**
- `limit`: Number of groups learned through IGMP Snooping. The range is from 100 to 8000.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
Before setting a new group-limit, you must either clear the MAC address table or clear the groups already learned.

- The unique OIFL (output interface list) combinations can only be 2000.
- Use the vPC type-2 inconsistency to show the configuraitons on vPC peers.
- A reload is not necessary after configuring the group-limit.
- This command does not require a license.

**Examples**
This example shows how to set the maximum number of groups to 500:
```
switch(config)# hardware multicast snooping group-limit 500
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp snooping groups</code></td>
<td>Displays information about the group membership for IGMP snooping.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command does not require a license.

**Examples**
This example shows how to clear the explicit tracking information for VLAN 1:
```
switch# clear ip igmp snooping explicit-tracking vlan 1
switch#
```

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>show ip igmp snooping explicit-tracking vlan</td>
<td>Displays explicit host tracking information for IGMPv3.</td>
</tr>
</tbody>
</table>
hardware multicast snooping group-limit
I Commands

This chapter describes the Cisco NX-OS IGMP snooping commands that begin with I.
ip igmp snooping (Global)

To enable IGMP snooping, use the `ip igmp snooping` command. To disable IGMP snooping, use the `no` form of this command.

```
ip igmp snooping
no ip igmp snooping
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
Enabled

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
If the global configuration of IGMP snooping is disabled, then all VLANs are treated as disabled, whether they are enabled or not.

This command does not require a license.

**Examples**

This example shows how to enable IGMP snooping:
```
switch(config)# ip igmp snooping
switch(config)##
```

This example shows how to disable IGMP snooping:
```
switch(config)# no ip igmp snooping
switch(config)##
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping (VLAN)

To enable IGMP snooping on specified VLAN interfaces, use the `ip igmp snooping` command. To disable IGMP snooping on the interface, use the `no` form of this command.

```
ip igmp snooping
no ip igmp snooping
```

Syntax Description
This command has no arguments or keywords.

Command Default
Enabled

Command Modes
VLAN configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
If the global configuration of IGMP snooping is disabled, then all VLANs are treated as disabled, whether they are enabled or not.

This command does not require a license.

Examples
This example shows how to enable IGMP snooping on a VLAN interface:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping
switch(config-vlan)#
```

This example shows how to disable IGMP snooping on a VLAN interface:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping
switch(config-vlan)#
```

Related Commands
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
</table>
| show ip igmp snooping    | Displays IGMP snooping information.
ip igmp snooping event-history

To configure the size of the IGMP snooping event history buffers, use the `ip igmp snooping event-history` command. To revert to the default buffer size, use the `no` form of this command.

```
ip igmp snooping event-history {igmp-snoop-internal | mfdm | mfdm-sum | rib | vlan | vlan-events | vpc} size buffer-size
```

```
o ip igmp snooping event-history {igmp-snoop-internal | mfdm | mfdm-sum | rib | vlan | vlan-events | vpc} size buffer-size
```

### Syntax Description

- **igmp-snoop-internal**: Clears the IGMP snooping internal event history buffer.
- **mfdm**: Clears the multicast FIB distribution (MFDM) event history buffer.
- **mfdm-sum**: Clears the MFDM sum event history buffer.
- **rib**: Clears the Routing Information Base (RIB) event history buffer.
- **vlan**: Clears the VLAN event history buffer.
- **vlan-events**: Clears the VLAN-event event history buffer.
- **vpc**: Clears the virtual port channel (vPC) event history buffer.
- **size**: Specifies the size of the buffer to allocate.
- **buffer-size**: Buffer size that is one of the following values: `disabled`, `large`, `medium`, or `small`. The default buffer size is `small`.

### Command Default

All history buffers are allocated as small.

### Command Modes

Global configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to configure the IGMP snooping VLAN event history buffer size:

```
switch(config)# ip igmp snooping event-history vlan size large
switch(config)#
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>clear ip igmp snooping event-history</code></td>
<td>Clears the contents of the IGMP snooping event history buffers.</td>
</tr>
<tr>
<td><code>show ip igmp snooping event-history</code></td>
<td>Displays information in the IGMP snooping event history buffers.</td>
</tr>
<tr>
<td><code>show running-config igmp</code></td>
<td>Displays information about the IGMP running-system configuration.</td>
</tr>
</tbody>
</table>
ip igmp snooping explicit-tracking

To enable tracking of IGMPv3 membership reports from individual hosts for each port on a per-VLAN basis, use the `ip igmp snooping explicit-tracking` command. To disable tracking, use the `no` form of this command.

```
ip igmp snooping explicit-tracking
no ip igmp snooping explicit-tracking
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
Enabled

**Command Modes**
VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command does not require a license.

**Examples**
This example shows how to enable tracking of IGMPv3 membership reports on a VLAN interface:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping explicit-tracking
switch(config-vlan)#
```

This example shows how to disable IGMP snooping on a VLAN interface:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping explicit-tracking
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping fast-leave

To enable support of IGMPv2 hosts that cannot be explicitly tracked because of the host report suppression mechanism of the IGMPv2 protocol, use the `ip igmp snooping fast-leave` command. To disable support of IGMPv2 hosts, use the `no` form of this command.

```
ip igmp snooping fast-leave

no ip igmp snooping fast-leave
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
Disabled

**Command Modes**
VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
When you enable fast leave, the IGMP software assumes that no more than one host is present on each VLAN port.

This command does not require a license.

**Examples**
This example shows how to enable support of IGMPv2 hosts:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping fast-leave
switch(config-vlan)#
```

This example shows how to disable support of IGMPv2 hosts:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping fast-leave
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping last-member-query-interval

To configure a query interval in which the software removes a group, use the `ip igmp snooping last-member-query-interval` command. To reset the query interval to the default, use the `no` form of this command.

```
ip igmp snooping last-member-query-interval interval
no ip igmp snooping last-member-query-interval [interval]
```

**Syntax Description**

- `interval`  
  Query interval in seconds. The range is from 1 to 25. The default is 1.

**Command Default**

The query interval is 1.

**Command Modes**

VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure a query interval in which the software removes a group:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping last-member-query-interval 3
switch(config-vlan)#
```

This example shows how to reset a query interval to the default:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping last-member-query-interval
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping link-local-groups-suppression

To enable suppression of IGMP reports from link-local groups, use the `ip igmp snooping link-local-groups-suppression` command. To disable suppression of these reports, use the `no` form of this command.

```
  ip igmp snooping link-local-groups-suppression
  no ip igmp snooping link-local-groups-suppression
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
Enabled

**Command Modes**
Global configuration mode
VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
If this setting is disabled on the entire device, then it is disabled on all VLANs on device, irrespective of the specific VLAN setting.

This command does not require a license.

**Examples**
This example shows how to enable suppression of IGMP reports from link-local groups:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping link-local-groups-suppression
switch(config-vlan)#
```

This example shows how to disable suppression of IGMP reports from link-local groups:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping link-local-groups-suppression
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping mrouter interface

To configure a static connection to a multicast router, use the `ip igmp snooping mrouter interface` command. To remove the static connection, use the `no` form of this command.

```
ip igmp snooping mrouter interface {ethernet slot[QSFP-module]/port | port-channel number[sub_if_number]}
no ip igmp snooping mrouter interface {ethernet slot[QSFP-module]/port | port-channel number[sub_if_number]}
```

**Syntax Description**

- `ethernet` (Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255 The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.

  **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- `port-channel number` (Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- `sub_if_number` (Optional) Subinterface number. The range is from 1 to 4093.

**Command Default**

None

**Command Modes**

VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The interface to the router must be in the selected VLAN.

This command does not require a license.

**Examples**

This example shows how to configure a static connection to a multicast router:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping mrouter interface ethernet 2/1
switch(config-vlan)#
```

This example shows how to remove a static connection to a multicast router:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping mrouter interface ethernet 2/1
switch(config-vlan)#
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp snooping</code></td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping mrouter vpc-peer-link

To configure a static connection to a virtual port channel (vPC) peer link, use the **ip igmp snooping mrouter vpc-peer-link** command. To remove the static connection, use the **no** form of this command.

```plaintext
ip igmp snooping mrouter vpc-peer-link
no ip igmp snooping mrouter vpc-peer-link
```

**Syntax Description**  
This command has no arguments or keywords.

**Command Default**  
None

**Command Modes**  
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**  
By default, a vPC Peer-link is considered an IGMP snooping mrouter port. The multicast traffic is sent over to a peer-link for the source VLAN and for each receiving VLAN. If you use the **no ip igmp snooping mrouter vpc-peer-link** command, the multicast traffic is not sent over to a peer-link for the source VLAN and receiver VLAN unless there are orphan ports in the VLAN.

This command does not require a license.

**Examples**

This example shows how to configure a static connection to a vPC peer link:

```
switch(config)# ip igmp snooping mrouter vpc-peer-link
switch(config)#
```

This example shows how to remove a static connection to a vPC peer link:

```
switch(config)# no ip igmp snooping mrouter vpc-peer-link
Warning: IGMP Snooping mrouter vpc-peer-link should be globally disabled on peer VPC switch as well.
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping optimise-multicast-flood

To configure Optimized Multicast Flood (OMF) on all VLANs, use the `ip igmp snooping optimise-multicast-flood` command. To remove the OMF from all VLANs, use the `no` form of this command.

```
ip igmp snooping optimise-multicast-flood
no ip igmp snooping optimise-multicast-flood
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
None

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command does not require a license.

**Examples**
This example shows how to configure OMF on all VLANs:

```
switch(config)# ip igmp snooping optimise-multicast-flood
switch(config)#
```

This example shows how to remove OMF from all VLANs:

```
switch(config)# no ip igmp snooping optimise-multicast-flood
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
To configure a snooping querier on an interface when you do not enable Protocol Independent Multicast (PIM) because multicast traffic does not need to be routed, use the `ip igmp snooping querier` command. To remove the snooping querier, use the `no` form of this command.

```plaintext
ip igmp snooping querier querier
no ip igmp snooping querier [querier]
```

**Syntax Description**

- `querier` Querier IP address.

**Command Default**

None

**Command Modes**

VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The querier IP address cannot be a multicast address.

This command does not require a license.

**Examples**

This example shows how to configure a snooping querier:

```plaintext
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping querier 172.20.52.106
switch(config-vlan)#
```

This example shows how to disable IGMP snooping on a VLAN interface:

```plaintext
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping querier
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp snooping</code></td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
**ip igmp snooping report-suppression**

To enable limiting the membership report traffic sent to multicast-capable routers, use the `ip igmp snooping report-suppression` command. To disable the limitation, use the `no` form of this command.

```
ip igmp snooping report-suppression
no ip igmp snooping report-suppression
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

Enabled

**Command Modes**

Global configuration mode
VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)NI(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

When you disable report suppression, all IGMP reports are sent as is to multicast-capable routers. This command does not require a license.

**Examples**

This example shows how to enable limiting the membership report traffic:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping report-suppression
switch(config-vlan)#
```

This example shows how to disable limiting the membership report traffic:

```
switch(config)# vlan 1
switch(config-vlan)# no ip igmp snooping report-suppression
switch(config-vlan)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping static-group

To configure a Layer 2 port of a VLAN as a static member of a multicast group, use the `ip igmp snooping static-group` command. To remove the static member, use the `no` form of this command.

```
ip igmp snooping static-group group [source source] interface {ethernet slot[QSFP-module/port | port-channel number,.sub_if_number]}
no ip igmp snooping static-group group [source source] interface {ethernet slot[QSFP-module/port | port-channel number,.sub_if_number]}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Command Default</th>
<th>Command Modes</th>
<th>Command History</th>
<th>Usage Guidelines</th>
<th>Examples</th>
</tr>
</thead>
</table>
| group            | None          | VLAN configuration mode | This command does not require a license. | This example shows how to configure a static member of a multicast group:  
switch(config)# vlan 1  
switch(config-vlan)# ip igmp snooping static-group 230.0.0.1 interface ethernet 2/1  
switch(config-vlan)# |
| source source    |               |                 |                  | This example shows how to remove a static member of a multicast group:  
switch(config)# vlan 1  
switch(config-vlan)# no ip igmp snooping static-group 230.0.0.1 interface ethernet 2/1  
switch(config-vlan)# |
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip igmp snooping</code></td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>

```
switch(config-vlan)#
```
ip igmp snooping v3-report-suppression (Global)

To configure IGMPv3 report suppression and proxy reporting for VLANs on the entire device, use the `ip igmp snooping v3-report-suppression` command. To remove IGMPv3 report suppression, use the `no` form of this command.

```
ip igmp snooping v3-report-suppression
no ip igmp snooping v3-report-suppression
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

Disabled

**Command Modes**

Global configuration mode

**Command History**

```
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
```

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to configure IGMPv3 report suppression and proxy reporting for VLANs:

```
switch(config)# ip igmp snooping v3-report-suppression
```

This example shows how to remove IGMPv3 report suppression:

```
switch(config)# no ip igmp snooping v3-report-suppression
```

**Related Commands**

```
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
```
ip igmp snooping v3-report-suppression (VLAN)

To configure IGMPv3 report suppression and proxy reporting for VLANs, use the `ip igmp snooping v3-report-suppression` command. To remove IGMPv3 report suppression, use the `no` form of this command.

```
ip igmp snooping v3-report-suppression

no ip igmp snooping v3-report-suppression
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

Enabled

**Command Modes**

VLAN configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)NI(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

If this setting is disabled for the device, which is the default value, then it is disabled for all VLANs, irrespective of how you set this value for an individual VLAN. However, once you set the global setting to enabled, the settings for all the VLANs are enabled by default.

This command does not require a license.

**Examples**

This example shows how to configure IGMPv3 report suppression and proxy reporting for specified VLANs:

```
switch(config)# vlan 10-20
switch(config-vlan)# ip igmp snooping v3-report-suppression
```

This example shows how to remove IGMPv3 report suppression on specified VLANs:

```
switch(config)# vlan 10-20
switch(config-vlan)# no ip igmp snooping v3-report-suppression
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip igmp snooping</td>
<td>Displays IGMP snooping information.</td>
</tr>
</tbody>
</table>
ip igmp snooping v3-report-suppression (VLAN)
Show Commands

This chapter describes the Cisco NX-OS IGMP snooping show commands.
show forwarding distribution ip igmp snooping

To display information about Layer 2 IGMP snooping multicast Forwarding Information Base (FIB) distribution, use the `show forwarding distribution ip igmp snooping` command.

```
show forwarding distribution ip igmp snooping [vlan vlan-id [group group-addr [source source-addr]]]
```

**Syntax Description**

- `vlan vlan-id` (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
- `group group-addr` (Optional) Specifies a group address.
- `source source-addr` (Optional) Specifies a source address.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to display information about Layer 2 IGMP snooping multicast FIB distribution:

```
switch(config)# show forwarding distribution ip igmp snooping
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>test forwarding</td>
<td>Tests the forwarding distribution performance of the Forwarding Information Base (FIB).</td>
</tr>
<tr>
<td>distribution perf</td>
<td></td>
</tr>
</tbody>
</table>
show ip igmp snooping

To display information about IGMP snooping, use the **show ip igmp snooping** command.

```
show ip igmp snooping [vlan vlan-id]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan vlan-id</td>
<td>(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093. The default is all VLANs.</td>
</tr>
</tbody>
</table>

### Command Default

Displays all VLANs.

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command does not require a license.

### Examples

This example shows how to display information about IGMP snooping for a VLAN:

```
switch(config)# show ip igmp snooping vlan 20
IGMP Snooping information for vlan 20
IGMP snooping enabled
Optimised Multicast Flood (OMF) disabled
IGMP querier none
Switch-querier disabled
IGMPv3 Explicit tracking enabled
IGMPv2 Fast leave disabled
IGMPv1/v2 Report suppression enabled
IGMPv3 Report suppression disabled
Link Local Groups suppression enabled
Router port detection using PIM Hellos, IGMP Queries
Number of router-ports: 1
Number of groups: 0
Active ports:
  Eth1/21   Po100
switch(config)#
```
show ip igmp snooping event-history

To display information in the IGMP snooping event history buffers, use the `show ip igmp snooping event-history` command.

```
show ip igmp snooping event-history { vpc | igmp-snoop-internal | mfdm | mfdm-sum | vlan | vlan-events }
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vpc</td>
<td>Displays the event history buffer of type virtual port channel (vPC).</td>
</tr>
<tr>
<td>igmp-snoop-internal</td>
<td>Displays the event history buffer of type IGMP snooping internal.</td>
</tr>
<tr>
<td>mfdm</td>
<td>Displays the event history buffer of type multicast FIB distribution (MFDM).</td>
</tr>
<tr>
<td>mfdm-sum</td>
<td>Displays the event history buffer of type MFDM sum.</td>
</tr>
<tr>
<td>vlan</td>
<td>Displays the event history buffer of type VLAN.</td>
</tr>
<tr>
<td>vlan-events</td>
<td>Displays the event history buffer of type VLAN events.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to display information in the IGMP snooping VLAN event history buffer:

```
switch(config)# show ip igmp snooping event-history vlan

  vlan Events for IGMP snoopprocess
2008 Apr 12 06:30:47.790031 igmp [4588]: IGMPv3 proxy report: no routers found
2008 Apr 12 06:30:47.790012 igmp [4588]: IGMPv3 proxy report: no records to send
2008 Apr 12 06:30:47.789882 igmp [4588]: IGMPv3 proxy report: no routers found
2008 Apr 12 06:30:47.789740 igmp [4588]: IGMPv3 proxy report: no routers found
2008 Apr 12 06:30:47.789721 igmp [4588]: IGMPv3 proxy report: no records to send
2008 Apr 12 06:30:47.789584 igmp [4588]: IGMPv3 proxy report: no routers found
2008 Apr 12 06:13:17.022028 igmp [4588]: Received a STP Topology change notification, 1 vlans
2008 Apr 12 06:13:17.022023 igmp [4588]: Received a STP Topology change notification
2008 Apr 12 06:13:15.022294 igmp [4588]: Received a STP Topology change notification, 1 vlans
2008 Apr 12 06:13:15.022289 igmp [4588]: Received a STP Topology change notification
```
show ip igmp snooping event-history

```
cation
2008 Apr 12 06:13:14.662417 igmp [4588]: : Received a STP Topology change notifi
cation, 1 vlans
2008 Apr 12 06:13:14.662412 igmp [4588]: : Received a STP Topology change notifi
cation
2008 Apr 12 06:13:12.642393 igmp [4588]: : Received a STP Topology change notifi
cation, 1 vlans
2008 Apr 12 06:13:12.642388 igmp [4588]: : Received a STP Topology change notifi
cation
2008 Apr 12 06:13:11.946051 igmp [4588]: : Received a STP Topology change notifi
cation, 1 vlans
2008 Apr 12 06:13:11.946046 igmp [4588]: : Received a STP Topology change notifi
cation
<---Output truncated-->  
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip igmp snooping event-history</td>
<td>Configures the size of the IGMP snooping event history buffers.</td>
</tr>
<tr>
<td>clear ip igmp snooping event-history</td>
<td>Clears information in the IGMP snooping event history buffers.</td>
</tr>
</tbody>
</table>
show ip igmp snooping explicit-tracking

To display information about explicit tracking for IGMP snooping, use the `show ip igmp snooping explicit-tracking` command.

```
show ip igmp snooping explicit-tracking [vlan vlan-id]
```

**Syntax Description**

| `vlan vlan-id`       | (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093. |

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

When you use this command without the optional `vlan` argument, the system displays information for all VLANs.

This command does not require a license.

**Examples**

This example shows how to display information about explicit tracking for IGMP snooping for VLAN 33:

```
switch# show ip igmp snooping explicit-tracking vlan 33
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip igmp snooping explicit-tracking vlan</td>
<td>Clears the IGMP snooping explicit host tracking information for VLANs.</td>
</tr>
<tr>
<td>ip igmp snooping explicit-tracking</td>
<td>Enables tracking of IGMPv3 membership reports from individual hosts for each port on a VLAN.</td>
</tr>
</tbody>
</table>
show ip igmp snooping groups

To display information about the group membership for IGMP snooping, use the `show ip igmp snooping groups` command.

```
show ip igmp snooping groups [{source [group]} | {group [source]}] [vlan vlan-id] [detail]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>(Optional) Source address for route.</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Group address for route.</td>
</tr>
<tr>
<td>vlan</td>
<td>(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.</td>
</tr>
<tr>
<td>detail</td>
<td>(Optional) Displays detailed information for the group.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to display information about the group membership for IGMP snooping:

```
switch(config)# show ip igmp snooping groups
TType: S - Static, D - Dynamic, R - Router port
Vlan  Group Address    Ver  Type  Port list
20    */*                -    R     Vlan20
switch(config)#
```
show ip igmp snooping mrouter

To display the multicast routers detected by IGMP snooping, use the `show ip igmp snooping mrouter` command.

```
show ip igmp snooping mrouter [vlan vlan-id]
```

**Syntax Description**

- `vlan vlan-id` (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to display the multicast routers detected by IGMP snooping:

```
switch(config)# show ip igmp snooping mrouter
Type: S - Static, D - Dynamic, V - vPC Peer Link
Type: S - Static, D - Dynamic, V - vPC Peer Link, I - Internal
Vlan  Router-port  Type  Uptime     Expires
20    Vlan20        I    04:16:16    never (down)

switch(config)#
```
show ip igmp snooping querier

To display information about IGMP snooping queriers, use the show ip igmp snooping querier command.

```
show ip igmp snooping querier [vlan vlan-id]
```

**Syntax Description**

- `vlan vlan-id` (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

- **Release** 5.2(1)N1(1)
- **Modification** This command was introduced.

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows how to display information about IGMP snooping queriers:

```
switch(config)# show ip igmp snooping querier
```
show ip igmp snooping statistics

To display information about IGMP snooping statistics, use the `show ip igmp snooping statistics` command.

```
show ip igmp snooping statistics [vlan vlan-id | global]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan vlan-id</td>
<td>(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.</td>
</tr>
<tr>
<td>global</td>
<td>(Optional) Specifies the global statistics.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

When you use this command without any options, the system prints statistics for all VLANs. This command does not require a license.

**Examples**

This example shows how to display information about IGMP snooping statistics for VLAN 1:

```
switch(config)# show ip igmp snooping statistics vlan 1
```
MSDP Commands
This chapter describes the Cisco NX-OS MSDP commands that begin with C.
clear ip msdp event-history

To clear information in the Multicast Source Discovery Protocol (MSDP) event history buffers, use the `clear ip msdp event-history` command.

```
clear ip msdp event-history
```

**Syntax Description**  
This command has no arguments or keywords.

**Command Default**  
None

**Command Modes**  
Any command mode

**Command History**

```
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
```

**Usage Guidelines**  
This command requires the LAN Base Services license.

**Examples**  
This example shows how to clear information in the MSDP event history buffers:

```
switch(config)# clear ip msdp event-history
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip msdp event-history</td>
<td>Configures the size of the MSDP event history buffers.</td>
</tr>
<tr>
<td>show ip msdp event-history</td>
<td>Displays information in the MSDP event history buffers.</td>
</tr>
</tbody>
</table>
clear ip msdp peer

To clear a TCP connection to Multicast Source Discovery Protocol (MSDP) peers, use the clear ip msdp peer command.

```
clear ip msdp peer peer-address [vrf vrf-name | default | management]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>IP address of the MSDP peer.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear a TCP connection to an MSDP peer:

```
switch# clear ip msdp peer 192.168.1.10
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
clear ip msdp policy statistics sa-policy

To clear the Source-Active (SA) policy for Multicast Source Discovery Protocol (MSDP) peers, use the `clear ip msdp policy statistics sa-policy` command.

```
clear ip msdp policy statistics sa-policy peer-address [in | out] [vrf vrf-name | default | management]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>peer-address</code></td>
<td>IP address of the MSDP peer for the SA policy.</td>
</tr>
<tr>
<td><code>in</code></td>
<td>Specifies the input policy.</td>
</tr>
<tr>
<td><code>out</code></td>
<td>Specifies the output policy.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>(Optional) Specifies that the default VRF entry be cleared from the multicast routing table.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>(Optional) Specifies that the management VRF entry be cleared from the multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear an SA policy for an MSDP peer:

```
switch# clear ip msdp policy statistics sa-policy
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip msdp peer</code></td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
clear ip msdp route

To clear routes that match group entries in the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) cache, use the clear ip msdp route command.

```
clear ip msdp route { * | group | group-prefix } [vrf { vrf-name | all | default | management }]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>*</code></td>
<td>Specifies all sources for the group from the SA cache.</td>
</tr>
<tr>
<td><code>group</code></td>
<td>Group address in the format A.B.C.D.</td>
</tr>
<tr>
<td><code>group-prefix</code></td>
<td>Group prefix in the format A.B.C.D/length.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies that all VRF entries be cleared from the SA-cache.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Specifies that the default VRF entry be cleared from the SA-cache.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>Specifies that the management VRF entry be cleared from the SA-cache.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

You can also use the clear ip msdp sa-cache command for the same function.

This command requires the LAN Base Services license.

### Examples

This example shows how to clear the MSDP SA cache:

```
switch# clear ip msdp route *
switch#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip msdp sa-cache</td>
<td>Clears the MSDP SA cache.</td>
</tr>
</tbody>
</table>
clear ip msdp sa-cache

To clear routes that match group entries in the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) cache, use the `clear ip msdp sa-cache` command.

```
clear ip msdp sa-cache { * | group | group-prefix } [ vrf { vrf-name | all | default | management } ]
```

**Syntax Description**
- *: Specifies all sources for the group from the SA cache.
- `group`: Group address in the format A.B.C.D.
- `group-prefix`: Group prefix in the format A.B.C.D/length.
- `vrf`: (Optional) Clears the virtual routing and forwarding (VRF) instance information.
- `vrf-name`: VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- `all`: Specifies that all VRF entries be cleared from the SA-cache.
- `default`: Specifies that the default VRF entry be cleared from the SA-cache.
- `management`: Specifies that the management VRF entry be cleared from the SA-cache.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can also use the `clear ip msdp route` command for the same function.

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear the MSDP SA cache:

```
switch# clear ip msdp sa-cache
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip msdp route</td>
<td>Clears the MSDP SA cache.</td>
</tr>
<tr>
<td>show ip msdp sa-cache</td>
<td>Displays route information in the MSDP Source-Active cache.</td>
</tr>
</tbody>
</table>
clear ip msdp statistics

To clear statistics for Multicast Source Discovery Protocol (MSDP) peers, use the clear ip msdp statistics command.

```
clear ip msdp statistics [peer-address] [vrf vrf-name | default | management]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>(Optional) IP address of the MSDP peer.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>default</td>
<td>(Optional) Specifies that the default VRF entry be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>(Optional) Specifies that the management VRF entry be cleared from the multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear MSDP statistics for all MSDP peers:

```
switch# clear ip msdp statistics
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
clear ip msdp statistics
F Commands

This chapter describes the Cisco NX-OS MSDP commands that begin with F.
feature msdp

To enable Multicast Source Discovery Protocol (MSDP), use the `feature msdp` command. To disable PIM, use the `no` form of this command.

```
feature msdp
no feature msdp
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

Disabled

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You must enable the MSDP feature before you can configure MSDP.

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable a MSDP configuration:

```
switch(config)# feature msdp
switch(config#)
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-configuration msdp</td>
<td>Displays the MSDP running configuration information.</td>
</tr>
<tr>
<td>show feature</td>
<td>Displays the status of features on a switch.</td>
</tr>
<tr>
<td>ip msdp peer</td>
<td>Configures a MSDP peer.</td>
</tr>
</tbody>
</table>
I Commands

This chapter describes the Cisco NX-OS MSDP commands that begin with I.
ip msdp description

To configure a description for the Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp description** command. To remove the description for the peer, use the **no** form of this command.

```
ip msdp description peer-address text
no ip msdp description peer-address [text]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>IP address of MSDP peer.</td>
</tr>
<tr>
<td>text</td>
<td>Text description.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure an MSDP peer description:

```
switch(config)# ip msdp description 192.168.1.10 engineering peer
```

This example shows how to remove an MSDP peer description:

```
switch(config)# no ip msdp description 192.168.1.10
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp event-history

To configure the size of the Multicast Source Discovery Protocol (MSDP) event history buffers, use the `ip msdp event-history` command. To revert to the default buffer size, use the `no` form of this command.

```
ip msdp event-history {cli | events | msdp-internal | routes | tcp} size buffer-size
no ip msdp event-history {cli | events | msdp-internal | routes | tcp} size buffer-size
```

**Syntax Description**

- **cli** Configures the CLI event history buffer.
- **events** Configures the peer-events event history buffer.
- **msdp-internal** Configures the MSDP internal event history buffer.
- **routes** Configures the routes event history buffer.
- **tcp** Configures the TCP event history buffer.
- **size** Specifies the size of the buffer to allocate.
- **buffer-size** Buffer size that is one of the following values: disabled, large, medium, or small. The default buffer size is small.

**Command Default**

All history buffers are allocated as small.

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the size of the MSDP event history buffer:

```
switch(config)# ip msdp event-history events size medium
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip routing</td>
<td>Clears information in the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td>multicast</td>
<td></td>
</tr>
<tr>
<td>event-history</td>
<td></td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>show routing ip multicast</td>
<td>Displays information in the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td>event-history</td>
<td></td>
</tr>
<tr>
<td>show running-config msdp</td>
<td>Displays information about the running-system MSDP configuration.</td>
</tr>
</tbody>
</table>
**ip msdp flush-routes**

To flush routes when the Multicast Source Discovery Protocol (MSDP) process is restarted, use the `ip msdp flush-routes` command. To leave routes in place, use the `no` form of this command.

```
ip msdp flush-routes
no ip msdp flush-routes
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
The routes are not flushed.

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
To display whether flush routes are configured, use this command line:

```
switch(config)# show running-config | include flush-routes
```

This command requires the LAN Base Services license.

**Examples**
This example shows how to configure flushing routes when the MSDP process is restarted:

```
switch(config)# ip msdp flush-routes
```

This example shows how to configure leaving routes when the MSDP process is restarted:

```
switch(config)# no ip msdp flush-routes
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show running-config</code></td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip msdp group-limit

To configure the Multicast Source Discovery Protocol (MSDP) maximum number of (S, G) entries that the software creates for the specified prefix, use the **ip msdp group-limit** command. To remove the group limit, use the **no** form of this command.

```
  ip msdp group-limit  limit source  prefix
  no  ip msdp group-limit  limit source  prefix
```

### Syntax Description

- **limit**
  - Limit on number of groups. The range is from 0 to 4294967295. The default is no limit.
- **source**
  - Specifies the prefix to match sources against.

### Command Default

None

### Command Modes

Global configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to configure the maximum number of (S, G) entries to create for a source:

```
switch(config)# ip msdp group-limit 4000 source 192.168.1.0/24
```

This example shows how to remove the limit entries to create:

```
switch(config)# no ip msdp group-limit 4000 source 192.168.1.0/24
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp sources</td>
<td>Displays information about the MSDP learned sources and group limit.</td>
</tr>
</tbody>
</table>
ip msdp keepalive

To configure a Multicast Source Discovery Protocol (MSDP) peer keepalive interval and timeout, use the ip msdp keepalive command. To reset the timeout and interval to the default, use the no form of this command.

```
ip msdp keepalive peer-address interval timeout
no ip msdp keepalive peer-address [interval timeout]
```

**Syntax Description**
- **peer-address**: IP address of an MSDP peer.
- **interval**: Keepalive interval in seconds. The range is from 1 to 60. The default is 60.
- **timeout**: Keepalive timeout in seconds. The range is from 1 to 90. The default is 90.

**Command Default**
The keepalive interval is 60 seconds.
The keepalive timeout is 90 seconds.

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**
This example shows how to configure an MSDP peer keepalive interval and timeout:

```
switch(config)# ip msdp keepalive 192.168.1.10 60 80
```

This example shows how to reset a keepalive interval and timeout to the default:

```
switch(config)# no ip msdp keepalive 192.168.1.10
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp mesh-group

To configure a Multicast Source Discovery Protocol (MSDP) mesh group with a peer, use the `ip msdp mesh-group` command. To remove the peer from one or all mesh groups, use the `no` form of this command.

```
ip msdp mesh-group peer-address name
no ip msdp mesh-group peer-address [name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>peer-address</code></td>
<td>IP address of an MSDP peer in a mesh group.</td>
</tr>
<tr>
<td><code>name</code></td>
<td>Name of a mesh group.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a mesh group with a peer:

```
switch(config)# ip msdp mesh-group 192.168.1.10 my_admin_mesh
```

This example shows how to remove a peer from a mesh group:

```
switch(config)# no ip msdp mesh-group 192.168.1.10 my_admin_mesh
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp mesh-group</td>
<td>Displays information about MSDP mesh groups.</td>
</tr>
</tbody>
</table>
ip msdp originator-id

To configure the IP address used in the RP field of a Source-Active message entry, use the `ip msdp originator-id` command. To reset the value to the default, use the `no` form of this command.

```
ip msdp originator-id [ethernet slot[QSFP-module/]port | loopback if_number | port-channel number | vlan vlan-id]

no ip msdp originator-id [[ethernet slot[QSFP-module/]port | loopback if_number | port-channel number | vlan vlan-id]]
```

**Syntax Description**

- **ethernet slot[QSFP-module/]port**
  Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.
  
  **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- **loopback if_number**
  Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- **port-channel number**
  Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **vlan vlan-id**
  Specifies the VLAN interface. The range is from 1 to 4094.

**Command Default**

The MSDP process uses the RP address of the local system.

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the IP address used in the RP field of SA messages:

```
switch(config)# ip msdp originator-id loopback0
```

This example shows how to reset the RP address to the default:

```
switch(config)# no ip msdp originator-id loopback0
```
<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>show ip msdp</td>
<td>Displays a summary of MDSP information.</td>
</tr>
<tr>
<td></td>
<td>summary</td>
<td></td>
</tr>
</tbody>
</table>

```
ip msdp originator-id
```
ip msdp password

To enable a Multicast Source Discovery Protocol (MSDP) MD5 password for the peer, use the `ip msdp password` command. To disable an MD5 password for a peer, use the `no` form of this command.

```
ip msdp password peer-address password
no ip msdp password peer-address [password]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>IP address of an MSDP peer.</td>
</tr>
<tr>
<td>password</td>
<td>MD5 password.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable an MD5 password for a peer:

```
switch(config)# ip msdp password 192.168.1.10 my_password
```

This example shows how to disable an MD5 password for a peer:

```
switch(config)# no ip msdp password 192.168.1.10
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays MDSP peer information.</td>
</tr>
</tbody>
</table>
ip msdp peer

To configure a Multicast Source Discovery Protocol (MSDP) peer with the specified peer IP address, use the `ip msdp peer` command. To remove an MSDP peer, use the `no` form of this command.

```
ip msdp peer peer-address connect-source { ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id} [remote-as asn]
```

```
no ip msdp peer peer-address [connect-source { ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id}] [remote-as asn]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>IP address of the MSDP peer.</td>
</tr>
<tr>
<td>connect-source</td>
<td>Configures a local IP address for a TCP connection.</td>
</tr>
</tbody>
</table>
| ethernet slot/[QSFP-module]/port | Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.  
  **Note** The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM). |
| loopback if_number | Specifies the loopback interface. The loopback interface number is from 0 to 1023. |
| port-channel number | Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096. |
| vlan vlan-id | Specifies the VLAN interface. The range is from 1 to 4094. |
| remote-as asn | (Optional) Configures a remote autonomous system (AS) number. |

**Command Default**

None

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The software uses the source IP address of the interface for the TCP connection with the peer. If the AS number is the same as the local AS, then the peer is within the Protocol Independent Multicast (PIM) domain; otherwise, this peer is external to the PIM domain.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure an MSDP peer:

switch(config)# ip msdp peer 192.168.1.10 connect-source ethernet 1/0 remote-as 8
This example shows how to remove an MSDP peer:

```
switch(config)# no ip msdp peer 192.168.1.10
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp</td>
<td>Displays a summary of MSDP information.</td>
</tr>
<tr>
<td>summary</td>
<td></td>
</tr>
</tbody>
</table>

ip msdp reconnect-interval

To configure a reconnect interval for the TCP connection, use the `ip msdp reconnect-interval` command. To reset a reconnect interval to the default, use the `no` form of this command.

```
ip msdp reconnect-interval interval
no ip msdp reconnect-interval [interval]
```

**Syntax Description**

| **interval** | Reconnect interval in seconds. The range is from 1 to 60. The default is 10. |

**Command Default**

The reconnect interval is 10 seconds.

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a reconnect interval for the TCP connection:

```
switch(config)# ip msdp reconnect-interval 20
```

This example shows how to reset a reconnect interval to the default:

```
switch(config)# no ip msdp reconnect-interval
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip msdp peer</code></td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp sa-interval

To configure the interval at which the software transmits Source-Active (SA) messages, use the `ip msdp sa-interval` command. To reset the interval to the default, use the `no` form of this command.

```
ip msdp sa-interval interval

no ip msdp sa-interval [interval]
```

**Syntax Description**

`interval`  
SA transmission interval in seconds. The range is from 60 to 65,535. The default is 60.

**Command Default**

The SA message interval is 60 seconds.

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To display the SA interval configuration command, use this command line:

```
switch(config)# show running-config | include sa-interval
```

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure an SA transmission interval:

```
switch(config)# ip msdp sa-interval 100
```

This example shows how to reset the interval to the default:

```
switch(config)# no ip msdp sa-interval
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-config</td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip msdp sa-limit

To configure a limit on the number of (S, G) entries accepted from the peer, use the `ip msdp sa-limit` command. To remove the limit, use the `no` form of this command.

```
ip msdp sa-limit peer-address limit
no ip msdp sa-limit peer-address [limit]
```

**Syntax Description**
- `peer-address` IP address of an MSDP peer.
- `limit` Number of (S, G) entries. The range is from 0 to 4294967295. The default is none.

**Command Default**
None

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a Source-Active (SA) limit for a peer:
```
switch(config)# ip msdp sa-limit 192.168.1.10 5000
```

This example shows how to reset the limit to the default:
```
switch(config)# no ip msdp sa-limit 192.168.1.10
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp sa-policy in

To enable filtering of incoming Multicast Source Discovery Protocol (MSDP) Source-Active (SA) messages, use the `ip msdp sa-policy in` command. To disable filtering, use the `no` form of this command.

```
 ip msdp sa-policy peer-address policy-name in

 no ip msdp sa-policy peer-address policy-name in
```

**Syntax Description**
- `peer-address` IP address of an MSDP peer.
- `policy-name` Route-map policy name.

**Command Default**
Disabled

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**

This example shows how to enable filtering of incoming SA messages:

```
switch(config)# ip msdp sa-policy 192.168.1.10 my_incoming_sa_policy in
```

This example shows how to disable filtering:

```
switch(config)# no ip msdp sa-policy 192.168.1.10 my_incoming_sa_policy in
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp sa-policy out

To enable filtering of outgoing Source-Active (SA) messages, use the `ip msdp sa-policy out` command. To disable filtering, use the `no` form of this command.

```
ip msdp sa-policy peer-address policy-name out

no ip msdp sa-policy peer-address policy-name out
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>IP address of an MSDP peer.</td>
</tr>
<tr>
<td>policy-name</td>
<td>Route-map policy name.</td>
</tr>
</tbody>
</table>

**Command Default**

Disabled

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable filtering of SA messages:

```
switch(config)# ip msdp sa-policy 192.168.1.10 my_incoming_sa_policy out
```

This example shows how to disable filtering:

```
switch(config)# no ip msdp sa-policy 192.168.1.10 my_incoming_sa_policy out
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip msdp peer</code></td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp shutdown

To shut down a Multicast Source Discovery Protocol (MSDP) peer, use the `ip msdp shutdown` command. To enable the peer, use the `no` form of this command.

```
ip msdp shutdown peer-address
no ip msdp shutdown peer-address
```

**Syntax Description**

`peer-address` IP address of an MSDP peer.

**Command Default**

Enabled

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to disable an MSDP peer:

```
switch(config)# ip msdp shutdown 192.168.1.10
```

This example shows how to enable an MSDP peer:

```
switch(config)# no ip msdp shutdown 192.168.1.10
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip msdp peer</td>
<td>Displays information about MSDP peers.</td>
</tr>
</tbody>
</table>
ip msdp shutdown
R Commands

This chapter describes the Cisco NX-OS MSDP commands that begin with R.
To restart the Multicast Source Discovery Protocol (MSDP) process, use the `restart msdp` command.

```
switch(config)# restart msdp
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**
This example shows how to restart the MSDP process:

```
switch(config)# restart msdp
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip msdp flush-routes</td>
<td>Enables flushing routes when the MSDP process is restarted.</td>
</tr>
</tbody>
</table>
Show Commands

This chapter describes the Cisco NX-OS MSDP show commands.
**show ip msdp count**

To display information about Multicast Source Discovery Protocol (MSDP) counts, use the `show ip msdp count` command.

```
show ip msdp count [asn] [vrf {vrf-name | all}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>asn</code></td>
<td>(Optional) Autonomous system (AS) number.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display MSDP counts:

```
switch(config)# show ip msdp count
```
show ip msdp event-history

To display information in the Multicast Source Discovery Protocol (MSDP) event history buffers, use the `show ip msdp event-history` command.

```
show ip msdp event-history \{errors | msgs | statistics\}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>errors</td>
<td>Displays events of type error.</td>
</tr>
<tr>
<td>msgs</td>
<td>Displays events of type msg.</td>
</tr>
<tr>
<td>statistics</td>
<td>Displays events of type statistics.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Examples**

This example shows how to display information in the MSDP msgs event history buffer:

```
switch(config)# show ip msdp event-history msgs
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip msdp event-history</td>
<td>Clears the contents of the MSDP event history buffers.</td>
</tr>
<tr>
<td>ip msdp event-history</td>
<td>Configures the size of MSDP event history buffers.</td>
</tr>
</tbody>
</table>
show ip msdp mesh-group

To display information about Multicast Source Discovery Protocol (MSDP) mesh groups, use the show ip msdp mesh-group command.

```
show ip msdp mesh-group [mesh-group] [vrf {vrf-name | all}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>mesh-group</td>
<td>(Optional) Mesh group name.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

Command Default
None

Command Modes
Any command mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
This command requires the LAN Base Services license.

Examples
This example shows how to display information about MSDP mesh groups:
```
switch(config)# show ip msdp mesh-group
```
show ip msdp peer

To display information about Multicast Source Discovery Protocol (MSDP) peers, use the `show ip msdp peer` command.

```
show ip msdp peer [peer-address] [vrf {vrf-name | all}]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>peer-address</td>
<td>(Optional) IP address of an MSDP peer.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about MSDP peers:

```
switch(config)# show ip msdp peer
```
show ip msdp policy statistics sa-policy

To display information about Multicast Source Discovery Protocol (MSDP) Source-Active (SA) policies, use the `show ip msdp policy statistics sa-policy` command.

```
show ip msdp policy statistics sa-policy peer-address {in | out} [vrf {vrf-name}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>peer-address</code></td>
<td>IP address of the MSDP peer for the SA policy.</td>
</tr>
<tr>
<td><code>in</code></td>
<td>Specifies the input policy.</td>
</tr>
<tr>
<td><code>out</code></td>
<td>Specifies the output policy.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about MSDP SA policies:

```
switch(config)# show ip msdp policy statistics sa-policy 192.168.1.10 in
```
show ip msdp route

To display information about the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) cache, use the `show ip msdp route` command.

```
show ip msdp route [{source [group]} | {group [source]}] [asn] [peer peer] [detail] [vrf {vrf-name | all}]
```

### Syntax Description

- **source**: Source address for SA cache information.
- **group**: (Optional) Group address for SA cache information.
- **asn**: (Optional) Autonomous system (AS) number.
- **peer peer**: (Optional) Specifies the IP address of a peer.
- **detail**: (Optional) Displays detailed information.
- **vrf**: (Optional) Applies to a virtual routing and forwarding (VRF) instance.
- **vrf-name**: VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all**: Specifies all VRFs.

### Command Default
None

### Command Modes
Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

The `show ip msdp sa-cache` command is an alternative form of this command.

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about the MSDP cache:

```
switch(config)# show ip msdp route
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip msdp route</td>
<td>Clears routes in the MSDP Source-Active cache.</td>
</tr>
<tr>
<td>show ip msdp sa-cache</td>
<td>Displays information about the MSDP SA cache.</td>
</tr>
</tbody>
</table>
show ip msdp rpf

To display information about the Multicast Source Discovery Protocol (MSDP) next-hop autonomous system (AS) on the Border Gateway Protocol (BGP) path to a rendezvous point (RP) address, use the show ip msdp rpf command.

```
show ip msdp rpf rp-address [vrf {vrf-name all}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rp-address</td>
<td>IP address of the RP.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about MSDP reverse path forwarding (RPF) peers:

```
switch(config)# show ip msdp rpf 192.168.1.10
```
show ip msdp sa-cache

To display information about the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) cache, use the `show ip msdp sa-cache` command.

```
show ip msdp sa-cache [{source [group]] | {group [source]}] [asn] [peer peer] [detail] [vrf {vrf-name | all}]
```

**Syntax Description**

- `source` Source address for SA cache information.
- `group` (Optional) Group address for SA cache information.
- `asn` (Optional) Autonomous system (AS) number.
- `peer peer` (Optional) Specifies the IP address of a peer.
- `detail` (Optional) Displays detailed information.
- `vrf` (Optional) Applies to a virtual routing and forwarding (VRF) instance.
- `vrf-name` VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- `all` Specifies all VRFs.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `show ip msdp route` command is an alternative form of this command.

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about the MSDP SA cache:

```
switch(config)# show ip msdp sa-cache
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>clear ip msdp sa-cache</code></td>
<td>Clears routes in the MSDP Source-Active cache.</td>
</tr>
<tr>
<td><code>show ip msdp route</code></td>
<td>Displays information about the MSDP SA cache.</td>
</tr>
</tbody>
</table>
### show ip msdp route

To display information about the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) route cache, use the `show ip msdp route` command.

```
show ip msdp route [source | {group | sources}] [asn | peer | detail] [vrf {vrf-name | all}]
```

#### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>source</code></td>
<td>Source address for SA cache information.</td>
</tr>
<tr>
<td><code>group</code></td>
<td>(Optional) Group address for SA cache information.</td>
</tr>
<tr>
<td><code>asn</code></td>
<td>(Optional) Autonomous system (AS) number.</td>
</tr>
<tr>
<td><code>peer peer</code></td>
<td>(Optional) Specifies the IP address of a peer.</td>
</tr>
<tr>
<td><code>detail</code></td>
<td>(Optional) Displays detailed information.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

#### Command Default

None

#### Command Modes

Any command mode

#### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

#### Usage Guidelines

The `show ip msdp route` command is an alternative form of this command. This command requires the LAN Base Services license.

#### Examples

This example shows how to display information about the MSDP SA cache:

```
switch(config)# show ip msdp sa-cache
```

#### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>clear ip msdp sa-cache</code></td>
<td>Clears routes in the MSDP Source-Active cache.</td>
</tr>
<tr>
<td><code>show ip msdp route</code></td>
<td>Displays information about the MSDP SA cache.</td>
</tr>
</tbody>
</table>
show ip msdp sources

To display information about Multicast Source Discovery Protocol (MSDP) learned sources, use the 
show ip msdp sources command.

```
show ip msdp sources [vrf {vrf-name | all}]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about MSDP learned sources:

```
switch(config)# show ip msdp sources
```
### show ip msdp summary

To display summary information about Multicast Source Discovery Protocol (MSDP) peers, use the `show ip msdp summary` command.

```
show ip msdp summary [vrf {vrf-name | all}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command Default</th>
<th>None</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Command Modes</th>
<th>Any command mode</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Command History</th>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usage Guidelines</th>
<th>This command requires the LAN Base Services license.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Examples</th>
<th>This example shows how to display summary information about MSDP peers:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><code>switch(config)# show ip msdp summary</code></td>
</tr>
</tbody>
</table>
**show running-config msdp**

To display information about the running-system configuration for Multicast Source Discovery Protocol (MSDP), use the `show running-config msdp` command.

```
show running-config msdp [all]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>all</th>
<th>(Optional) Displays configured and default information.</th>
</tr>
</thead>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about the MSDP running-system configuration:

```
switch(config)# show running-config msdp

!Command: show running-config msdp
!Time: Sat Apr 12 09:14:49 2008

version 5.2(1)N1(1)
feature msdp

switch(config)#
```
show startup-config msdp

To display information about the startup-system configuration for Multicast Source Discovery Protocol (MSDP), use the show startup-config msdp command.

    show startup-config msdp [all]

Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>(Optional) Displays configured and default information.</td>
</tr>
</tbody>
</table>

Command Default

None

Command Modes

Any command mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about the startup-system configuration for MSDP:

    switch(config)# show startup-config msdp
PIM Commands
C Commands

This chapter describes the Cisco NX-OS PIM commands that begin with C.
clear ip mroute

To clear the multicast routing table, use the `clear ip mroute` command.

```
clear ip mroute { * | group [source] | group-prefix] [vrf { vrf-name | all | default | management}]
```

**Syntax Description**

- **:*** Specifies all routes.
- **group** Group address in the format `A.B.C.D`.
- **source** (Optional) Source `(S, G)` route.
- **group-prefix** Group prefix in the format `A.B.C.D/length`.
- **vrf** (Optional) Clears the virtual routing and forwarding (VRF) instance information.
- **vrf-name** VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all** Specifies that all VRF entries be cleared from the multicast routing table.
- **default** Specifies that the default VRF entry be cleared from the multicast routing table.
- **management** Specifies that the management VRF entry be cleared from the multicast routing table.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `clear routing multicast` command is an alternative form of this command.

**Examples**

This example shows how to clear the multicast routing table:

```
switch(config)# clear ip mroute *
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear routing multicast</td>
<td>Clears the multicast routing table</td>
</tr>
<tr>
<td>show ip mroute</td>
<td>Displays information about the multicast routing table.</td>
</tr>
</tbody>
</table>
clear ip pim event-history

To clear information in the IPv4 Protocol Independent Multicast (PIM) event history buffers, use the clear ip pim event-history command.

```
clear ip pim event-history
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**
This example shows how to clear information in the PIM event history buffers:
```
switch(config)# clear ip pim event-history
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim event-history</td>
<td>Configures the size of the PIM event history buffers.</td>
</tr>
<tr>
<td>show ip pim event-history</td>
<td>Displays information in the PIM event history buffers.</td>
</tr>
</tbody>
</table>
clear ip pim interface statistics

To clear Protocol Independent Multicast (PIM) counters for a specified interface, use the `clear ip pim interface statistics` command.

```
clear ip pim interface statistics [ethernet slot[QSFP-module]/port | port-channel channel-number[.sub_if-number] | vlan vlan-id]
```

**Syntax Description**

- `ethernet slot[QSFP-module]/port` (Optional) Specifies the Ethernet interface. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The `port` number is from 1 to 128.
  
  **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- `port-channel number` (Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- `sub_if-number` (Optional) Subinterface number. The range is from 1 to 4093.

- `vlan vlan-id` (Optional) Specifies the VLAN. The range is from 1 to 4094.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear the PIM counters for a specified interface:

```
switch# clear ip pim interface statistics ethernet 2/1
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim statistics</code></td>
<td>Displays PIM statistics.</td>
</tr>
</tbody>
</table>
clear ip pim policy statistics

To clear Protocol Independent Multicast (PIM) policy counters, use the clear ip pim policy statistics command.

```
clear ip pim policy statistics {jp-policy | neighbor-policy} {ethernet slot/[QSFP-module]/port | port-channel channel-number[.sub_if-number] | vlan vlan-id}

clear ip pim policy statistics register-policy [vrf {vrf-name | all | default | management}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>jp-policy</code></td>
<td>Specifies statistics for the join-prune policy.</td>
</tr>
<tr>
<td><code>neighbor-policy</code></td>
<td>Specifies statistics for the neighbor policy.</td>
</tr>
<tr>
<td><code>ethernet</code></td>
<td>Specifies the Ethernet interface and the slot number and port number.</td>
</tr>
<tr>
<td><code>slot/[QSFP-module]/port</code></td>
<td>The slot number is from 1 to 255. The <code>QSFP-module</code> number is from 1 to 4. The port number is from 1 to 128.</td>
</tr>
<tr>
<td>Note</td>
<td>The <code>QSFP-module</code> number applies only to the QSFP+ Generic Expansion Module (GEM).</td>
</tr>
<tr>
<td><code>port-channel</code></td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td><code>number</code></td>
<td>(Optional) Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td><code>vlan</code></td>
<td>Specifies the VLAN.</td>
</tr>
<tr>
<td><code>vlan-id</code></td>
<td>VLAN number. The range is from 1 to 4094.</td>
</tr>
<tr>
<td><code>register-policy</code></td>
<td>Specifies statistics for the register policy.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
clear ip pim policy statistics

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear PIM register policy counters:

```
switch# clear ip pim policy statistics register-policy
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim policy</td>
<td>Displays PIM policy statistics.</td>
</tr>
<tr>
<td>statistics</td>
<td></td>
</tr>
</tbody>
</table>
clear ip pim route

To clear routes specific to Protocol Independent Multicast (PIM) for IPv4, use the clear ip pim route command.

```
clear ip pim route { * | group [source] | group-prefix } [vrf { vrf-name | all | default | management }]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Specifies all routes.</td>
</tr>
<tr>
<td>group</td>
<td>Group address in the format A.B.C.D.</td>
</tr>
<tr>
<td>source</td>
<td>(Optional) Source (S, G) route.</td>
</tr>
<tr>
<td>group-prefix</td>
<td>Group prefix in the format A.B.C.D/length.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the multicast routing table.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to clear the all the routes specific to PIM:

```
switch(config)# clear ip pim route *
switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim route</td>
<td>Displays information about PIM specific routes.</td>
</tr>
</tbody>
</table>
clear ip pim statistics

To clear Protocol Independent Multicast (PIM) statistics counters, use the clear ip pim statistics command.

    clear ip pim statistics [vrf {vrf-name | all | default | management}]

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf</td>
<td>(Optional) Clears the virtual routing and forwarding (VRF) instance information.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to clear PIM statistics counters:

```
switch# clear ip pim statistics
switch#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim statistics</td>
<td>Displays PIM statistics.</td>
</tr>
</tbody>
</table>
clear ip routing multicast event-history

To clear information in the IPv4 Multicast Routing Information Base (MRIB) event history buffers, use the `clear ip routing multicast event-history` command.

```
clear ip routing multicast event-history {cli | mfdm-debugs | mfdm-events | mfdm-stats | rib | vrf}
```

**Syntax Description**
- `cli` Clears the CLI event history buffer.
- `mfdm-debugs` Clears the multicast FIB distribution (MFDM) debug history buffer.
- `mfdm-events` Clears the MFDM events history buffer.
- `mfdm-stats` Clears the MFDM sum event history buffer.
- `rib` Clears the RIB event history buffer.
- `vrf` Clears the virtual routing and forwarding (VRF) event history buffer.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command does not require a license.

**Examples**
This example shows how to clear information in the MRIB RIB event history buffer:

```
switch(config)# clear ip routing multicast event-history rib
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip routing multicast event-history</td>
<td>Configures the size of the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td>show routing ip multicast event-history</td>
<td>Displays information in the IPv4 MRIB event history buffers.</td>
</tr>
</tbody>
</table>
### clear routing multicast

To clear the IPv4 multicast routing table, use the **clear routing multicast** command.

```plaintext
clear routing [ip | ipv4] multicast { * | group [source] | group-prefix } [vrf { vrf-name | all | default | management ]}
```

#### Syntax Description

- **ip** (Optional) Clears IP commands.
- **ipv4** (Optional) Clears IPv4 commands.
- ***** Specifies all routes.
- **group** Group address in the format A.B.C.D.
- **source** (Optional) Source (S, G) route.
- **group-prefix** Group prefix in the format A.B.C.D/length.
- **vrf** (Optional) Clears the virtual routing and forwarding (VRF) instance information.
- **vrf-name** VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all** Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
- **default** Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
- **management** Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

#### Command Default

None

#### Command Modes

Any command mode

#### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

#### Usage Guidelines

The **clear ip mroute** command is an alternative form of this command.

This command does not require a license.

#### Examples

This example shows how to clear the IPv4 multicast routing table:

```plaintext
switch(config)# clear routing multicast *
switch(config)#
```
## clear routing multicast

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip mroute</td>
<td>Clears the multicast routing table.</td>
</tr>
<tr>
<td>show routing ip multicast</td>
<td>Displays information about IPv4 multicast routes.</td>
</tr>
</tbody>
</table>
clear routing multicast
F Commands

This chapter describes the Cisco NX-OS PIM commands that begin with F.
feature pim

To enable Protocol Independent Multicast (PIM), use the feature pim command. To disable PIM, use the no form of this command.

    feature pim
    no feature pim

Syntax Description
This command has no arguments or keywords.

Command Default
Disabled

Command Modes
Global configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
You must enable the PIM feature before you can configure PIM.

This command requires the LAN Base Services license.

Examples
This example shows how to enable a PIM configuration:

    switch(config)# feature pim
    switch(config)#

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-configuration pim</td>
<td>Displays the PIM running configuration information.</td>
</tr>
<tr>
<td>show feature</td>
<td>Displays the status of features on a switch.</td>
</tr>
<tr>
<td>ip pim sparse-mode</td>
<td>Enables IPv4 PIM sparse mode on an interface.</td>
</tr>
</tbody>
</table>
I Commands

This chapter describes the Cisco NX-OS PIM commands that begin with I.
ip mroute

To configure multicast reverse path forwarding (RPF) static routes, use the `ip mroute` command. To remove RPF static routes, use the `no` form of this command.

```
ip mroute {ip-addr ip-mask | ip-prefix} {{next-hop | nh-prefix} | {ethernet slot[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id}} [pref] [vrf vrf-name]

no ip mroute {ip-addr ip-mask | ip-prefix} {{next-hop | nh-prefix} | {ethernet slot[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id}} [pref] [vrf vrf-name]
```

**Syntax Description**

- `ip-addr` IP prefix in the format i.i.i.
- `ip-mask` IP network mask in the format m.m.m.m.
- `ip-prefix` IP prefix and network mask length in the format x.x.x.x/m.
- `next-hop` IP next-hop address in the format i.i.i.i.
- `nh-prefix` IP next-hop prefix in the format i.i.i.i/m.
- `ethernet slot[QSFP-module]/port` Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.
  
  **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- `loopback if_number` Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- `port-channel number` Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- `vlan vlan-id` Specifies the VLAN interface. The range is from 1 to 4094.

- `pref` (Optional) Route preference. The range is from 1 to 255. The default is 1.

- `vrf vrf-name` (Optional) Specifies the virtual routing and forwarding (VRF) context name. The name can be any case-sensitive, alphanumeric string up to 32 characters.

**Command Default**
The route preference is 1.

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure an RPF static route:

```
switch(config)# ip mroute 192.0.2.33/24 192.0.2.1
switch(config)#
```

This example shows how to remove an RPF static route:

```
switch(config)# no ip mroute 192.0.2.33/24 192.0.2.1
switch(config)#
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip mroute</td>
<td>Displays information about multicast routes.</td>
</tr>
</tbody>
</table>
ip pim anycast-rp

To configure an IPv4 Protocol Independent Multicast (PIM) Anycast-RP peer for the specified Anycast-RP address, use the `ip pim anycast-rp` command. To remove the peer, use the `no` form of this command.

```
ip pim anycast-rp anycast-rp rp-addr
no ip pim anycast-rp anycast-rp rp-addr
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>anycast-rp</code></td>
<td>Anycast-RP address of the peer.</td>
</tr>
<tr>
<td><code>rp-addr</code></td>
<td>Address of RP in the Anycast-RP set.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

- Global configuration mode
- VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

Each command with the same Anycast-RP address forms an Anycast-RP set. The IP addresses of RPs are used for communication with RPs in the set.

This command requires the LAN Base Services license.

### Examples

This example shows how to configure a PIM Anycast-RP peer:

```
switch# configure terminal
switch(config)# ip pim anycast-rp 192.0.2.3 192.0.2.31
```

This example shows how to remove a peer:

```
switch# configure terminal
switch(config)# no ip pim anycast-rp 192.0.2.3 192.0.2.31
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim rp</code></td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim auto-rp

To enable Protocol Independent Multicast (PIM) listening and forwarding of Auto-RP messages, use the `ip pim auto-rp listen` and `ip pim auto-rp forward` commands. To disable the listening and forwarding of Auto-RP messages, use the `no` form of this command.

```
ip pim auto-rp {listen [forward] | forward [listen]}

no ip pim auto-rp { [listen [forward] | forward [listen]] }
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>listen</td>
<td>Specifies to listen to Auto-RP messages.</td>
</tr>
<tr>
<td>forward</td>
<td>Specifies to forward Auto-RP messages.</td>
</tr>
</tbody>
</table>

**Command Default**

Disabled

**Command Modes**

Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable listening and forwarding of Auto-RP messages:
```
switch(config)# ip pim auto-rp listen forward
```

This example shows how to disable listening and forwarding of Auto-RP messages:
```
switch(config)# no ip pim auto-rp listen forward
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim auto-rp mapping-agent

To configure the router as an IPv4 Protocol Independent Multicast (PIM) Auto-RP mapping agent that sends RP-Discovery messages, use the ip pim auto-rp mapping-agent command. To remove the mapping agent configuration, use the no form of this command.

```
ip pim auto-rp mapping-agent {ethernet slot[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id} [scope ttl]
oip pim auto-rp mapping-agent [{ethernet slot[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id}] [scope ttl]
```

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet slot[QSFP-module]/port</td>
<td>Specifies the Ethernet interface and the slot number and port number.</td>
</tr>
<tr>
<td></td>
<td>The slot number is from 1 to 255. The QSFP-module number is from 1 to 4.</td>
</tr>
<tr>
<td></td>
<td>The port number is from 1 to 128.</td>
</tr>
<tr>
<td>Note</td>
<td>The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).</td>
</tr>
<tr>
<td>loopback if_number</td>
<td>Specifies the loopback interface. The loopback interface number is from 0 to 1023.</td>
</tr>
<tr>
<td>port-channel number</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN interface. The range is from 1 to 4094.</td>
</tr>
<tr>
<td>scope ttl</td>
<td>(Optional) Specifies the time-to-live (TTL) value for the scope of Auto-RP Discovery messages. The range is from 1 to 255. The default is 32.</td>
</tr>
<tr>
<td>Note</td>
<td>See the ip pim border command to explicitly define a router on the edge of a PIM domain rather than using the scope argument.</td>
</tr>
</tbody>
</table>

Command Default

The TTL is 32.

Command Modes

Global configuration mode
VRF configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

The ip pim send-rp-discovery command is an alternative form of this command. This command requires the LAN Base Services license.
**Examples**

This example shows how to configure an Auto-RP mapping agent:

```
switch(config)# ip pim auto-rp mapping-agent ethernet 2/1
```

This example shows how to remove the Auto-RP mapping agent configuration:

```
switch(config)# no ip pim auto-rp mapping-agent ethernet 2/1
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim border</td>
<td>Configures a router to be on the edge of a PIM domain.</td>
</tr>
<tr>
<td>ip pim send-rp-discovery</td>
<td>Configures a router as an Auto-RP mapping agent.</td>
</tr>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim auto-rp mapping-agent-policy

To enable filtering of IPv4 Protocol Independent Multicast (PIM) Auto-RP Discover messages, use the ip pim auto-rp mapping-agent-policy command. To disable filtering, use the no form of this command.

```
ip pim auto-rp mapping-agent-policy policy-name
no ip pim auto-rp mapping-agent-policy [policy-name]
```

**Syntax Description**

```
policy-name                      Route-map policy name.
```

**Command Default**

Disabled

**Command Modes**

Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command can be used on client routers where you can specify mapping agent addresses.

You can specify mapping agent source addresses to filter messages from with the match ip multicast command in a route-map policy.

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable a route-map policy to filter Auto-RP Discover messages:

```
switch(config)# ip pim auto-rp mapping-agent-policy my_mapping_agent_policy
```

This example shows how to disable filtering:

```
switch(config)# no ip pim auto-rp mapping-agent-policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim auto-rp rp-candidate

To configure an IPv4 Protocol Independent Multicast (PIM) Auto-RP candidate route processor (RP), use the `ip pim auto-rp rp-candidate` command. To remove an Auto-RP candidate RP, use the `no` form of this command.

```
ip pim auto-rp rp-candidate { ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id } { group-list prefix } { [scope ttl] | [interval interval] }

no ip pim auto-rp rp-candidate { { ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id } } { group-list prefix } { [scope ttl] | [interval interval] }
```

### Syntax Description

- **ethernet slot/[QSFP-module]/port**
  - Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.
  - **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- **loopback if_number**
  - Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- **port-channel number**
  - Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **vlan vlan-id**
  - Specifies the VLAN interface. The range is from 1 to 4094.

- **group-list prefix**
  - Specifies the group range used for the access list.

- **scope ttl**
  - (Optional) Specifies a time-to-live (TTL) value for the scope of Auto-RP Announce messages. The range is from 1 to 255. The default is 32.
  - **Note** See the `ip pim border` command to explicitly define a router on the edge of a PIM domain rather than using the `scope` argument.

- **interval interval**
  - (Optional) Specifies an Auto-RP Announce message transmission interval in seconds. The range is from 1 to 65,535. The default is 60.

### Command Default

The TTL is 32.
The Announce message interval is 60 seconds

### Command Modes

- Global configuration mode
- VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

The `scope` and `interval` keywords can be entered once and in any order.
The **ip pim send-rp-announce** command is an alternative form of this command. Using a route map, you can add group ranges that this auto RP candidate-RP can serve.

**Note**

Use the same configuration guidelines for the route-map auto-rp-range that you used when you create a route map for static RPS.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a PIM Auto-RP candidate RP:

```
switch(config)# ip pim auto-rp rp-candidate ethernet 2/1 group-list 239.0.0.0/24
```

This example shows how to remove a PIM Auto-RP candidate RP:

```
switch(config)# no ip pim auto-rp rp-candidate ethernet 2/1 group-list 239.0.0.0/24
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim send-rp-announce</td>
<td>Configures a PIM Auto-RP candidate RP.</td>
</tr>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim auto-rp rp-candidate-policy

To allow the Auto-RP mapping agents to filter IPv4 Protocol Independent Multicast (PIM) Auto-RP Announce messages that are based on a route-map policy, use the `ip pim auto-rp rp-candidate-policy` command. To disable filtering, use the `no` form of this command.

```plaintext
ip pim auto-rp rp-candidate-policy policy-name
no ip pim auto-rp rp-candidate-policy [policy-name]
```

Syntax Description

- **policy-name**: Route-map policy name.

Command Default

Disabled

Command Modes

- Global configuration mode
- VRF configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

You can specify the RP and group addresses, and whether the type is ASM with the `match ip multicast` command in a route-map policy.

This command requires the LAN Base Services license.

Examples

This example shows how to allow the Auto-RP mapping agents to filter Auto-RP Announce messages:

```plaintext
switch(config)# ip pim auto-rp rp-candidate-policy my_policy
```

This example shows how to disable filtering:

```plaintext
switch(config)# no ip pim auto-rp rp-candidate-policy
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
To configure an interface on an IPv4 Protocol Independent Multicast (PIM) border, use the `ip pim border` command. To remove an interface from a PIM border, use the `no` form of this command.

```
ip pim border
no ip pim border
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
The interface is not on a PIM border.

**Command Modes**
Interface configuration mode

**Command History**
```
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
```

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**
This example shows how to configure an interface on a PIM border:
```
switch(config)# ip pim border
```

This example shows how to remove an interface from a PIM border:
```
switch(config)# no ip pim border
```

**Related Commands**
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim bsr bsr-policy

To allow the bootstrap router (BSR) client routers to filter IPv4 Protocol Independent Multicast (PIM) BSR messages that are based on a route-map policy, use the `ip pim bsr bsr-policy` command. To disable filtering, use the `no` form of this command.

```
ip pim bsr bsr-policy policy-name
no ip pim bsr bsr-policy [policy-name]
```

**Syntax Description**

- `policy-name`: Route-map policy name.

**Command Default**

Disabled

**Command Modes**

- Global configuration mode
- VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can specify which source addresses to filter messages from with the `match ip multicast` command in a route-map policy.

This command requires the LAN Base Services license.

**Examples**

This example shows how to allow the BSR client routers to filter BSR messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim bsr bsr-policy my_bsr_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim bsr bsr-policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim bsr-candidate

To configure the router as an IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) candidate, use the `ip pim bsr-candidate` command. To remove a router as a BSR candidate, use the `no` form of this command.

```
ip pim [bsr] bsr-candidate {ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id} [hash-len hash-len] [priority priority]

no ip pim [bsr] bsr-candidate [{ethernet slot/[QSFP-module]/port | loopback if_number | port-channel number | vlan vlan-id}] [hash-len hash-len] [priority priority]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bsr</td>
<td>(Optional) Specifies the BSR protocol RP-distribution configuration.</td>
</tr>
<tr>
<td>ethernet slot/</td>
<td>Specifies the Ethernet interface and the slot number and port number. The</td>
</tr>
<tr>
<td>[QSFP-module]/port</td>
<td>slot number is from 1 to 255. The [QSFP-module] number is from 1 to 4. The</td>
</tr>
<tr>
<td></td>
<td>port number is from 1 to 128.</td>
</tr>
<tr>
<td>loopback if_number</td>
<td>Specifies the loopback interface. The loopback interface number is from</td>
</tr>
<tr>
<td></td>
<td>0 to 1023.</td>
</tr>
<tr>
<td>port-channel</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is</td>
</tr>
<tr>
<td>number</td>
<td>from 1 to 4096.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN interface. The range is from 1 to 4094.</td>
</tr>
<tr>
<td>hash-len</td>
<td>(Optional) Specifies the hash mask length used in BSR messages. The range is</td>
</tr>
<tr>
<td></td>
<td>from 0 to 32. The default is 30.</td>
</tr>
<tr>
<td>priority priority</td>
<td>(Optional) Specifies the BSR priority used in BSR messages. The range is</td>
</tr>
<tr>
<td></td>
<td>from 0 to 255. The default is 64.</td>
</tr>
</tbody>
</table>

### Command Default

The hash mask length is 30.
The BSR priority is 64.

### Command Modes

Global configuration mode
VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

The interface specified is used to derive the BSR source IP address used in BSR messages.
This command requires the LAN Base Services license.
**Examples**

This example shows how to configure a router as a BSR candidate:

```
switch(config)# ip pim bsr-candidate ethernet 2/2
```

This example shows how to remove a router as a BSR candidate:

```
switch(config)# no ip pim bsr-candidate
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim rp</code></td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim bsr forward

To listen to and forward IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) and Candidate-RP messages, use the `ip pim bsr forward` command. To disable listening and forwarding, use the `no` form of this command.

```
ip pim bsr forward [listen]
oip pim bsr [forward [listen]]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>forward</th>
<th>Specifies to forward BSR and Candidate-RP messages.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax Description</td>
<td>listen</td>
<td>(Optional) Specifies to listen to BSR and Candidate-RP messages.</td>
</tr>
</tbody>
</table>

Command Default: Disabled

Command Modes: Global configuration mode VRF configuration mode

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

The `ip pim bsr listen` command is an alternative form of this command.

This command requires the LAN Base Services license.

Examples

This example shows how to forward BSR and Candidate-RP messages:
```
switch(config)# ip pim bsr forward
```

This example shows how to disable forwarding:
```
switch(config)# no ip pim bsr forward
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim bsr listen</td>
<td>Enables listening to and forwarding of BSR messages.</td>
</tr>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
**ip pim bsr listen**

To listen to and forward IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) and Candidate-RP messages, use the `ip pim bsr listen` command. To disable listening and forwarding, use the `no` form of this command.

```
ip pim bsr listen [forward]
no ip pim bsr [listen [forward]]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Command Default</th>
<th>Command Modes</th>
<th>Command History</th>
<th>Usage Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>listen</strong></td>
<td>Disabled</td>
<td>Global configuration mode</td>
<td>Release Modification</td>
<td></td>
</tr>
<tr>
<td><strong>forward</strong></td>
<td>Optional</td>
<td>VRF configuration mode</td>
<td><strong>5.2(1)N1(1)</strong> This command was introduced.</td>
<td></td>
</tr>
</tbody>
</table>

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

The `ip pim bsr forward` command is an alternative form of this command.

This command requires the LAN Base Services license.

**Examples**

This example shows how to listen to and forward BSR and Candidate-RP messages:

```
switch(config)# ip pim bsr listen forward
```

This example shows how to disable listening and forwarding:

```
switch(config)# no ip pim bsr listen forward
```

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ip pim bsr forward</strong></td>
<td>Enables listening to and forwarding of BSR messages.</td>
<td></td>
</tr>
<tr>
<td><strong>show ip pim rp</strong></td>
<td>Displays information about PIM RPs.</td>
<td></td>
</tr>
</tbody>
</table>
ip pim bsr rp-candidate-policy

To filter IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) Candidate-RP messages that are based on a route-map policy, use the `ip pim bsr rp-candidate-policy` command. To disable filtering, use the `no` form of this command.

```
ip pim bsr rp-candidate-policy policy-name

no ip pim bsr rp-candidate-policy [policy-name]
```

**Syntax Description**

```
policy-name Route-map policy name.
```

**Command Default**

Disabled

**Command Modes**

- Global configuration mode
- VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can specify the RP and group addresses, and whether the type is ASM with the `match ip multicast` command in a route-map policy.

This command requires the LAN Base Services license.

**Examples**

This example shows how to filter Candidate-RP messages:

```
switch(config)# ip pim bsr rp-candidate-policy my_bsr_rp_candidate_policy
```

This example shows how to disable message filtering:

```
switch(config)# no ip pim bsr rp-candidate-policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim dr-priority

To configure the designated router (DR) priority that is advertised in IPv4 Protocol Independent Multicast (PIM) hello messages, use the `ip pim dr-priority` command. To reset the DR priority to the default, use the `no` form of this command.

```
ip pim dr-priority priority
no ip pim dr-priority [priority]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>priority</td>
<td>Priority value. The range is from 1 to 4294967295. The default is 1.</td>
</tr>
</tbody>
</table>

**Command Default**
The DR priority is 1.

**Command Modes**
Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**
This example shows how to configure DR priority on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim dr-priority 5
```

This example shows how to reset DR priority on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim dr-priority
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim event-history

To configure the size of the IPv4 Protocol Independent Multicast (PIM) event history buffers, use the `ip pim event-history` command. To revert to the default buffer size, use the `no` form of this command.

```
ip pim event-history { assert-receive | cli | hello | join-prune | null-register | packet | pim-internal | rp | vrf } size buffer-size

no ip pim event-history { assert-receive | cli | hello | join-prune | null-register | packet | pim-internal | rp | vrf } size buffer-size
```

**Syntax Description**

- `assert-receive`: Configures the assert receive event history buffer.
- `cli`: Configures the CLI event history buffer.
- `hello`: Configures the hello event history buffer.
- `join-prune`: Configures the join-prune event history buffer.
- `null-register`: Configures the null register event history buffer.
- `packet`: Configures the packet event history buffer.
- `pim-internal`: Configures the PIM internal event history buffer.
- `rp`: Configures the rendezvous point (RP) event history buffer.
- `vrf`: Configures the virtual routing and forwarding (VRF) event history buffer.
- `size`: Specifies the size of the buffer to allocate.
- `buffer-size`: Buffer size is one of the following values: `disabled`, `large`, `medium`, or `small`. The default buffer size is `small`.

**Command Default**

All history buffers are allocated as small.

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the size of the PIM hello event history buffer:

```
switch(config)# ip pim event-history hello size medium
switch(config)#
```
## ip pim event-history

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip pim event-history</td>
<td>Clears information in the IPv4 PIM event history buffers.</td>
</tr>
<tr>
<td>show ip pim event-history</td>
<td>Displays information in the IPv4 PIM event history buffers.</td>
</tr>
<tr>
<td>show running-config pim</td>
<td>Displays information about the running-system PIM configuration.</td>
</tr>
</tbody>
</table>
ip pim flush-routes

To remove routes when the IPv4 Protocol Independent Multicast (PIM) process is restarted, use the `ip pim flush-routes` command. To leave routes in place, use the `no` form of this command.

`ip pim flush-routes`

`no ip pim flush-routes`

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
The routes are not flushed.

**Command Modes**
Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
To display whether flush routes are configured, use this command line:

```
switch(config)# show running-config | include flush-routes
```

This command requires the LAN Base Services license.

**Examples**
This example shows how to remove routes when the PIM process is restarted:

```
switch(config)# ip pim flush-routes
```

This example shows how to leave routes in place when the PIM process is restarted:

```
switch(config)# no ip pim flush-routes
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-config</td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
**ip pim hello-authentication ah-md5**

To enable an MD5 hash authentication key in IPv4 Protocol Independent Multicast (PIM) hello messages, use the `ip pim hello-authentication ah-md5` command. To disable hello-message authentication, use the `no` form of this command.

```
ip pim hello-authentication ah-md5 auth-key

no ip pim hello-authentication ah-md5 [auth-key]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>auth-key</th>
<th>MD5 authentication key. You can enter an unencrypted (cleartext) key, or one of these values followed by a space and the MD5 authentication key:</th>
</tr>
</thead>
</table>
|                    |          | • 0—Specifies an unencrypted (cleartext) key  
|                    |          | • 3—Specifies a 3-DES encrypted key  
|                    |          | • 7—Specifies a Cisco Type 7 encrypted key  
|                    |          | The key can be from 1 to 16 characters. |

**Command Default**

Disabled

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

Triple Data Encryption Standard (3-DES) is a strong form of encryption (168-bit) that allows sensitive information to be transmitted over untrusted networks. Cisco Type 7 encryption uses the algorithm from the Vigenère cipher.

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable a 3-DES encrypted key for PIM hello-message authentication:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim hello-authentication-ah-md5 3 myauthkey
```

This example shows how to disable PIM hello-message authentication:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim hello-authentication-ah-md5
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim interface</code></td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
**ip pim hello-interval**

To configure the IPv4 Protocol Independent Multicast (PIM) hello-message interval on an interface, use the `ip pim hello-interval` command. To reset the hello interval to the default, use the `no` form of this command.

```
ip pim hello-interval interval

no ip pim hello-interval [interval]
```

**Syntax Description**

- `interval`: Interval in milliseconds. The range is from 1 to 18,724,286. The default is 30000.

**Note**

We do not support aggressive hello intervals. Any value below 30000 milliseconds is an aggressive PIM hello-interval value.

**Command Default**

The PIM hello interval is 30,000 milliseconds.

**Command Modes**

Interface configuration mode

**Command History**

- **Release** | **Modification**
  - 5.2(1)N1(1) | This command was introduced.

**Usage Guidelines**

At a minimum interval, VPC vs non-VPC cases, and also with single vs dual sup cases, Basically for vPC and with dual sups one needs to use default timers. the neighbor hold time is automatically set to 3.5x this value. Also it is recommended to use BFD for PIM instead of non-default timers.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the PIM hello-message interval on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim hello-interval 20000
```

This example shows how to reset the PIM hello-message interval on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim hello-interval
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim interface</code></td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim jp-policy

To filter IPv4 Protocol Independent Multicast (PIM) join-prune messages that are based on a route-map policy, use the `ip pim jp-policy` command. To disable filtering, use the `no` form of this command.

```
ip pim jp-policy policy-name [in | out]
no ip pim jp-policy [policy-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>policy-name</td>
<td>Route-map policy name.</td>
</tr>
<tr>
<td>in</td>
<td>Specifies that the system applies a filter only for incoming messages.</td>
</tr>
<tr>
<td>out</td>
<td>Specifies that the system applies a filter only for outgoing messages.</td>
</tr>
</tbody>
</table>

**Command Default**

Disabled; no filter is applied for either incoming or outgoing messages.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `ip pim jp-policy` command filters messages in both incoming and outgoing directions. To specify filtering only incoming messages, use the optional `in` keyword; to specify filtering only outgoing messages, use the optional `out` keyword. When you enter the command with no keywords, that is no explicit direction, the system rejects further configurations if given with explicit direction.

Use the `ip pim jp-policy` command to filter incoming messages. You can configure the route map to prevent state from being created in the multicast routing table.

You can specify group, group and source, or group and RP addresses to filter messages with the `match ip multicast` command.

This command requires the LAN Base Services license.

**Examples**

This example shows how to filter PIM join-prune messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim jp-policy my_jp_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim jp-policy
```

**Related Commands**
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim log-neighbor-changes

To generate syslog messages that list the IPv4 Protocol Independent Multicast (PIM) neighbor state changes, use the `ip pim log-neighbor-changes` command. To disable messages, use the `no` form of this command.

```
ip pim log-neighbor-changes
no ip pim log-neighbor-changes
```

**Syntax Description**  
This command has no arguments or keywords.

**Command Default**  
Disabled

**Command Modes**  
Global configuration mode
VRF configuration mode

**Command History**  
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**  
This command requires the LAN Base Services license.

**Examples**  
This example shows how to generate syslog message that list the PIM neighbor state changes:
```
switch(config)# ip pim log-neighbor-changes
```

This example shows how to disable logging:
```
switch(config)# no ip pim log-neighbor-changes
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>logging level ip pim</td>
<td>Configures the logging level of PIM messages.</td>
</tr>
</tbody>
</table>
ip pim neighbor-policy

To configure a route-map policy that determines which IPv4 Protocol Independent Multicast (PIM) neighbors should become adjacent, use the `ip pim neighbor-policy` command. To reset to the default, use the `no` form of this command.

```
ip pim neighbor-policy policy-name
no ip pim neighbor-policy [policy-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>policy-name</code></td>
<td>Route-map policy name.</td>
</tr>
</tbody>
</table>

**Command Default**

Forms adjacency with all neighbors.

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can use the `match ip address` command in a route-map policy to specify which groups to become adjacent to.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a policy that determines which PIM neighbors should become adjacent:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim neighbor-policy
```

This example shows how to reset to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim neighbor-policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim pre-build-spt

To prebuild the shortest path tree (SPT) for all known (S,G) in the routing table by triggering Protocol Independent Multicast (PIM) joins upstream, use the `ip pim pre-build-spt` command. To reset to the default, use the `no` form of this command.

```
ip pim pre-build-spt

no ip pim pre-build-spt
```

### Syntax Description
This command has no arguments or keywords.

### Command Default
Joins are triggered only if the OIF list is not empty.

### Command Modes
VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines
To prebuild the SPT for all known (S,G)s in the routing table by triggering PIM joins upstream, even in the absence of any receivers, use the `ip pim pre-build-spt` command.

By default, PIM (S,G) joins are triggered upstream only if the OIF-list for the (S,G) is not empty. It is useful in certain scenarios—for example, on the virtual port-channel (vPC) nonforwarding router—to prebuild the SPTs and maintain the (S,G) states even when the system is not forwarding on these routes. Prebuilding the SPT ensures faster convergence when a vPC failover occurs.

When you are running virtual port channels (vPCs), enabling this feature causes both vPC peer switches to join the SPT, even though only one vPC peer switch actually routes the multicast traffic into the vPC domain. This behavior results in the multicast traffic passing over two parallel paths from the source to the vPC switch pair, consuming bandwidth on both paths. Additionally, when both vPC peer switches join the SPT, one or more upstream devices in the network may be required to perform additional multicast replications to deliver the traffic on both parallel paths toward the receivers in the vPC domain.

This command requires the LAN Base Services license.

### Examples
This example shows how to prebuild the SPT in the absence of receivers:

```
switch(config)# vrf context Enterprise
switch(config-vrf)# ip pim pre-build-spt
switch(config-vrf)#
```
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim context</td>
<td>Displays information about PIM routes.</td>
</tr>
</tbody>
</table>
ip pim register-policy

To filter IPv4 Protocol Independent Multicast (PIM) Register messages that are based on a route-map policy, use the `ip pim register-policy` command. To disable message filtering, use the `no` form of this command.

```
ip pim register-policy policy-name

no ip pim register-policy [policy-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>policy-name</code></td>
<td>Route-map policy name.</td>
</tr>
</tbody>
</table>

**Command Default**

Disabled

**Command Modes**

Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can use the `match ip multicast` command in a route-map policy to specify the group or group and source addresses whose register messages that should be filtered.

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable filtering of PIM Register messages:

```
switch(config)# ip pim register-policy my_register_policy
```

This example shows how to disable message filtering:

```
switch(config)# no ip pim register-policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim policy stats register-policy</td>
<td>Displays statistics for PIM Register messages.</td>
</tr>
</tbody>
</table>
ip pim register-rate-limit

To configure a rate limit for IPv4 Protocol Independent Multicast (PIM) data registers, use the ip pim register-rate-limit command. To remove a rate limit, use the no form of this command.

```
ip pim register-rate-limit rate
no ip pim register-rate-limit [rate]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th></th>
<th>Rate in packets per second. The range is from 1 to 65,535.</th>
</tr>
</thead>
</table>

**Command Default**

None

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a rate limit for PIM data registers:

```
switch(config)# ip pim register-rate-limit 1000
```

This example shows how to remove a rate limit:

```
switch(config)# no ip pim register-rate-limit
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim vrf detail</td>
<td>Displays information about the PIM configuration.</td>
</tr>
</tbody>
</table>
ip pim rp-address

To configure an IPv4 Protocol Independent Multicast (PIM) static route processor (RP) address for a multicast group range, use the `ip pim rp-address` command. To remove a static RP address, use the `no` form of this command.

```
ip pim rp-address rp-address [group-list prefix | override | route-map policy-name]
no ip pim rp-address rp-address [group-list prefix | override | route-map policy-name]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>rp-address</code></td>
<td>IP address of a router which is the RP for a group range.</td>
</tr>
<tr>
<td><code>group-list</code></td>
<td>(Optional) Specifies a group range for a static RP.</td>
</tr>
<tr>
<td></td>
<td>prefix</td>
</tr>
<tr>
<td><code>override</code></td>
<td>(Optional) Specifies the RP address. The RP address overrides the dynamically learned RP addresses.</td>
</tr>
<tr>
<td><code>route-map</code></td>
<td>(Optional) Specifies a route-map policy name.</td>
</tr>
<tr>
<td></td>
<td>policy-name</td>
</tr>
</tbody>
</table>

### Command Default

The group range is treated in ASM mode.

### Command Modes

Global configuration mode

VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

The `match ip multicast` command is the only `match` command that is evaluated in the route map. You can specify group prefix to filter messages with the `match ip multicast` command.

Customers can use this “override” provision, if they want the static RPs always to override the dynamic ones.

This command requires the LAN Base Services license.

### Examples

This example shows how to configure a PIM static RP address for a serving group range and to override any dynamically learned (through BSR) RP addresses:

```
switch(config)# ip pim rp-address 1.1.1.1 group-list 225.1.0.0/16 override
```

This example shows how to configure a PIM static RP address for a group range:

```
switch(config)# ip pim rp-address 200.0.2.33 group-list 224.0.0.0/9
```

This example shows how to remove a static RP address:

```
switch(config)# no ip pim rp-address 192.0.2.33
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show ip pim rp</code></td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim rp-candidate

To configure the router as an IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) route processor (RP) candidate, use the ip pim rp-candidate command. To remove the router as an RP candidate, use the no form of this command.

```
ip pim [bsr] rp-candidate {ethernet slot[QSFP-module]/port | loopback if_number | port-channel number} {group-list prefix} [priority priority] [interval interval]

no ip pim [bsr] rp-candidate {ethernet slot[QSFP-module]/port | loopback if_number | port-channel number} {group-list prefix} [priority priority] [interval interval]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bsr</td>
<td>(Optional) Specifies the BSR protocol RP-distribution configuration.</td>
</tr>
<tr>
<td>ethernet</td>
<td>(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.</td>
</tr>
<tr>
<td>slot[QSFP-module]/port</td>
<td></td>
</tr>
<tr>
<td>loopback if_number</td>
<td>(Optional) Specifies the loopback interface. The loopback interface number from 0 to 1023.</td>
</tr>
<tr>
<td>port-channel number</td>
<td>(Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>group-list prefix</td>
<td>Specifies a group range handled by the RP.</td>
</tr>
<tr>
<td>priority priority</td>
<td>(Optional) Specifies the RP priority used in candidate-RP messages. The range is from 0 to 65,535. The default is 192.</td>
</tr>
<tr>
<td>interval interval</td>
<td>(Optional) Specifies the BSR message transmission interval in seconds. The range is from 1 to 65,535. The default is 60.</td>
</tr>
</tbody>
</table>

### Command Default

The RP priority is 192.
The BSR message interval is 60 seconds.

### Command Modes

Global configuration mode
VRF configuration mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

We recommend that you configure the candidate RP interval to be a minimum of 15 seconds.
Using this route map, you can add a range of group lists that this candidate-RP can serve.
Use the same configuration guidelines for the route-map auto-rp-range that you used when you created a route map for static RPS.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the router as a PIM BSR RP candidate:

```
switch(config)# ip pim rp-candidate e 2/11 group-list 239.0.0.0/24
```

This example shows how to remove the router as an RP candidate:

```
switch(config)# no ip pim rp-candidate
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
ip pim send-rp-announce

To configure an IPv4 Protocol Independent Multicast (PIM) Auto-RP candidate route processor (RP), use the **ip pim send-rp-announce** command. To remove an Auto-RP candidate RP, use the **no** form of this command.

```
ip pim send-rp-announce {ethernet slot/[QSFP-module/]port | loopback if_number | port-channel number} {group-list prefix} {[scope ttl] | [interval interval]}

no ip pim send-rp-announce [{ethernet slot/[QSFP-module/]port | loopback if_number | port-channel number} {group-list prefix} {[scope ttl] | [interval interval]}
```

**Syntax Description**

- **ethernet**
  - `slot/[QSFP-module/]port` (Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The `QSFP-module` number is from 1 to 4. The port number is from 1 to 128.
  - **Note** The `QSFP-module` number applies only to the QSFP+ Generic Expansion Module (GEM).

- **loopback if_number** (Optional) Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- **port-channel number** (Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **group-list prefix** Specifies a group range handled by the RP.

- **scope ttl** (Optional) Specifies a time-to-live (TTL) value for the scope of Auto-RP Announce messages. The range is from 1 to 255. The default is 32.
  - **Note** See the **ip pim border** command to explicitly define a router on the edge of a PIM domain rather than using the **scope** argument.

- **interval interval** (Optional) Specifies an Auto-RP Announce message transmission interval in seconds. The range is from 1 to 65,535. The default is 60.

**Command Default**
The TTL is 32.
The Auto-RP Announce message interval is 60 seconds.

**Command Modes**
Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
The **scope**, and **interval** keywords can be entered once and in any order.
The **ip pim auto-rp rp-candidate** command is an alternative form of this command.
This command requires the LAN Base Services license.

### Examples

This example shows how to configure a PIM Auto-RP candidate RP:

```bash
switch(config)# ip pim send-rp-announce ethernet 2/1 group-list 239.0.0.0/24
```

This example shows how to remove a PIM Auto-RP candidate RP:

```bash
switch(config)# no ip pim send-rp-announce ethernet 2/1 group-list 239.0.0.0/24
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip pim auto-rp rp-candidate</td>
<td>Configures a PIM Auto-RP candidate RP.</td>
</tr>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim send-rp-discovery

To configure the router as an IPv4 Protocol Independent Multicast (PIM) Auto-RP mapping agent that sends RP-Discovery messages, use the `ip pim send-rp-discovery` command. To remove the configuration, use the `no` form of this command.

```
  ip pim send-rp-discovery [ethernet slot/[QSFP-module/]port | loopback if_number | port-channel number] [scope ttl]
  no ip pim send-rp-discovery [[ethernet slot/[QSFP-module/]port | loopback if_number | port-channel number] [scope ttl]
```

**Syntax Description**

- **ethernet slot/[QSFP-module/]port**
  - Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.
  - **Note** The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).

- **loopback if_number**
  - Specifies the loopback interface. The loopback interface number is from 0 to 1023.

- **port-channel number**
  - Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **scope ttl**
  - (Optional) Specifies the time-to-live (TTL) value for the scope of Auto-RP Discovery messages. The range is from 1 to 255. The default is 32.
  - **Note** See the `ip pim border` command to explicitly define a router on the edge of a PIM domain rather than using the `scope` argument.

**Command Default**

The TTL is 32.

**Command Modes**

- Global configuration mode
- VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `ip pim auto-rp mapping-agent` command is an alternative form of this command. This command requires the LAN Base Services license.

**Examples**

This example shows how to configure an Auto-RP mapping agent:
switch(config)# ip pim send-rp-discovery ethernet 2/1

This example shows how to remove an Auto-RP mapping agent:

switch(config)# no ip pim send-rp-discovery ethernet 2/1

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
<tr>
<td>ip pim auto-rp mapping-agent</td>
<td>Configures a router as an Auto-RP mapping agent.</td>
</tr>
<tr>
<td>ip pim border</td>
<td>Configures a router to be on the edge of a PIM domain.</td>
</tr>
</tbody>
</table>
ip pim sg-expiry-timer

To adjust the (S, G) expiry timer interval for Protocol Independent Multicast sparse mode (PIM-SM) (S, G) multicast routes, use the **ip pim sg-expiry-timer** command. To reset to the default values, use the **no** form of the command.

```
ip pim [sparse] sg-expiry-timer seconds [sg-list route-map]
no ip pim [sparse] sg-expiry-timer seconds [sg-list route-map]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>sparse</strong></td>
<td>(Optional) Specifies sparse mode.</td>
</tr>
<tr>
<td><strong>seconds</strong></td>
<td>Expiry-timer interval. The range is from 181 to 57600 seconds.</td>
</tr>
<tr>
<td><strong>sg-list</strong></td>
<td>(Optional) Specifies S,G values to which the timer applies. The route map name can be a maximum of 100 alphanumeric characters.</td>
</tr>
<tr>
<td><strong>route-map</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Command Default**

The default expiry time is 180 seconds.
The timer applies to all (S, G) entries in the routing table.

**Command Modes**

VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure the expiry interval to 300 seconds for all (S, G) entries:

```
switch(config)# vrf context Enterprise
switch(config-vrf)# ip pim sg-expiry-timer 300
switch(config-vrf)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim context</td>
<td>Displays information about the PIM configuration.</td>
</tr>
</tbody>
</table>
ip pim sparse-mode

To enable IPv4 Protocol Independent Multicast (PIM) sparse mode on an interface, use the `ip pim sparse-mode` command. To disable PIM on an interface, use the `no` form of this command.

```
ip pim sparse-mode
no ip pim [sparse-mode]
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

Disabled

**Command Modes**

Interface configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to enable PIM sparse mode on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim sparse-mode
```

This example shows how to disable PIM on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim interface</td>
<td>Displays information about PIM-enabled interfaces.</td>
</tr>
</tbody>
</table>
ip pim ssm policy

To configure group ranges for Source Specific Multicast (SSM) using a route-map policy, use the `ip pim ssm policy` command. To remove the SSM group range policy, use the `no` form of this command.

```
ip pim ssm policy policy-name
no ip pim ssm policy policy-name
```

**Syntax Description**

- `policy-name`: Route-map policy name that defines the group prefixes where this feature is applied.

**Command Default**

The SSM range is 232.0.0.0/8.

**Command Modes**

- Global configuration mode
- VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a group range for SSM:

```
switch(config)# ip pim ssm policy my_ssm_policy
```

This example shows how to reset the group range to the default:

```
switch(config)# no ip pim ssm policy my_ssm_policy
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim group-range</td>
<td>Displays information about PIM group ranges.</td>
</tr>
</tbody>
</table>
**ip pim ssm**

To configure group ranges for Source Specific Multicast (SSM), use the `ip pim ssm range` command. To reset the SSM group range to the default, use the `no` form of this command with the `none` keyword.

```
ip pim ssm { range { groups | none } | route-map policy-name }
```

```
no ip pim ssm { range { groups | none } | route-map policy-name }
```

**Syntax Description**

- `groups`: List of up to four group range prefixes.
- `none`: Removes all group ranges.
- `route-map`: Specifies the route-map policy name.

**Command Default**
The SSM range is 232.0.0.0/8.

**Command Modes**
Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
The `match ip multicast` command is the only `match` command that is evaluated in the route map. You can specify the group prefix to filter messages with the `match ip multicast` command.

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a group range for SSM:
```
switch(config)# ip pim ssm range 239.128.1.0/24
```

This example shows how to reset the group range to the default:
```
switch(config)# no ip pim ssm range none
```

This example shows how to remove all group ranges:
```
switch(config)# ip pim ssm range none
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim group-range</td>
<td>Displays information about PIM group ranges.</td>
</tr>
</tbody>
</table>
ip pim state-limit

To configure a maximum number of IPv4 Protocol Independent Multicast (PIM) state entries in the current virtual routing and forwarding (VRF) instance, use the `ip pim state-limit` command. To remove the limit on state entries, use the `no` form of this command.

```
ip pim state-limit max-states [reserved policy-name max-reserved]
no ip pim state-limit [max-states [reserved policy-name max-reserved]]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>max-states</td>
<td>Maximum number of (*, G) and (S, G) entries allowed in this VRF. The range is from 1 to 429,496,7295. The default is no limit.</td>
</tr>
<tr>
<td>reserved</td>
<td>(Optional) Specifies that a number of state entries are to be reserved for the routes specified in a policy map.</td>
</tr>
<tr>
<td>policy-name</td>
<td>(Optional) Route-map policy name.</td>
</tr>
<tr>
<td>max-reserved</td>
<td>(Optional) Maximum reserved (*, G) and (S, G) entries allowed in this VRF. Must be less than or equal to the maximum states allowed. The range is from 1 to 429,496,7295.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To display commands where state limits are configured, use this command line:

```
switch(config)# show running-config | include state-limit
```

This command requires the LAN Base Services license.

**Examples**

This example shows how to configure a state entry limit with a number of state entries reserved for routes in a policy map:

```
switch(config)# ip pim state-limit 100000 reserved my_reserved_policy 40000
```

This example shows how to remove the limits on state entries:

```
switch(config)# no ip pim state-limit
```
### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show running-config</code></td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip pim use-shared-tree-only

To create the IPv4 Protocol Independent Multicast (PIM) (*, G) state only (where no source state is created), use the `ip pim use-shared-tree-only` command. To remove the creation of the shared tree state only, use the `no` form of this command.

```
ip pim use-shared-tree-only group-list policy-name

no ip pim use-shared-tree-only [group-list policy-name]
```

**Syntax Description**

| policy-name | Route-map policy name that defines the group prefixes where this feature is applied. |

**Command Default**

None

**Command Modes**

Global configuration mode
VRF configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You can use the `match ip multicast` command in a route-map policy to specify the groups where shared trees should be enforced.

This command requires the LAN Base Services license.

**Examples**

This example shows how to create the PIM (*, G) state only for the group prefixes defined in `my_group_policy`:

```
switch(config)# ip pim use-shared-tree-only group-list my_group_policy
```

This example shows how to remove the creation of the (*, G) state only:

```
switch(config)# no ip pim use-shared-tree-only
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip pim rp</td>
<td>Displays information about PIM RPs.</td>
</tr>
</tbody>
</table>
**ip routing multicast event-history**

To configure the size of the IPv4 Multicast Routing Information Base (MRIB) event history buffers, use the `ip routing multicast event-history` command. To revert to the default buffer size, use the `no` form of this command.

```
ip routing multicast event-history { cli | mfdm-debugs | mfdm-events | mfdm-stats | rib | vrf } size buffer-size
no ip routing multicast event-history { cli | mfdm | mfdm-stats | rib | vrf } size buffer-size
```

**Syntax Description**

- **cli**: Configures the CLI event history buffer.
- **mfdm-debugs**: Configures the multicast FIB distribution (MFDM) debug event history buffer.
- **mfdm-events**: Configures the multicast FIB distribution (MFDM) non-periodic events event history buffer.
- **mfdm-stats**: Configures the MFDM sum event history buffer.
- **rib**: Configures the RIB event history buffer.
- **vrf**: Configures the virtual routing and forwarding (VRF) event history buffer.
- **size**: Specifies the size of the buffer to allocate.
- **buffer-size**: Buffer size is one of the following values: disabled, large, medium, or small. The default buffer size is small.

**Command Default**

All history buffers are allocated as small.

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To display configured buffer sizes, use this command line:

```
switch(config)# show running-config | include “ip routing”
```

**Examples**

This example shows how to configure the size of the MRIB MFDM event history buffer:

```
switch(config)# ip routing multicast event-history mfdm size large
switch(config)#
```
### ip routing multicast event-history

The `ip routing multicast event-history` command is used to clear or display information in the IPv4 Multiprotocol Recursive Information Base (MRIB) event history buffers.

#### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip routing multicast event-history</td>
<td>Clears information in the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td>show routing ip multicast event-history</td>
<td>Displays information in the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td>show running-config</td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip routing multicast holddown

To configure the IPv4 multicast routing initial holddown period, use the `ip routing multicast holddown` command. To revert to the default holddown period, use the `no` form of this command.

```
[ip | ipv4] routing multicast holddown holddown-period
```

```
no [ip | ipv4] routing multicast holddown holddown-period
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>holddown-period</th>
<th>Initial route holddown period in seconds. The range is from 90 to 210. Specify 0 to disable the holddown period. The default is 210.</th>
</tr>
</thead>
</table>

**Command Default**

The holddown period is 210 seconds.

**Command Modes**

Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To display the holddown period configuration, use this command line:

```
switch(config)# show running-config | include "ip routing multicast holddown"
```

This command does not require a license.

**Examples**

This example shows how to configure the routing holddown period:

```
switch(config)# ip routing multicast holddown 100
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show running-config</td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
ip routing multicast software-replicate

To enable software replication of IPv4 Protocol Independent Multicast (PIM) Any Source Multicast (ASM) packets that are leaked to the software for state creation, use the `ip routing multicast software-replicate` command. To reset to the default, use the `no` form of this command.

```
ip routing multicast software-replicate
no ip routing multicast software-replicate
```

**Syntax Description**
This command has no arguments or keywords.

**Command Default**
No software replication.

**Command Modes**
Global configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
By default, these packets are used by the software only for (S,G) state creation and then dropped. This command does not require a license.

**Examples**
This example shows how to enable software replication of IPv4 PIM ASM packets:

```
switch(config)# ip routing multicast software-replicate
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>show running-config</code></td>
<td>Displays information about the running-system configuration.</td>
</tr>
</tbody>
</table>
R Commands

This chapter describes the Cisco NX-OS PIM commands that begin with R.
**restart pim**

To restart the IPv4 Protocol Independent Multicast (PIM) process, use the **restart pim** command.

```plaintext
restart pim
```

**Syntax Description**

This command has no arguments or keywords.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to restart the PIM process:

```plaintext
switch(config)# restart pim
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ip pim flush-routes</strong></td>
<td>Enables flushing routes when the PIM process is restarted.</td>
</tr>
</tbody>
</table>
Show Commands

This chapter describes the Cisco NX-OS PIM show commands.
show ip mroute

To display information about IPv4 multicast routes, use the **show ip mroute** command.

```
show ip mroute {group [source group] [group [source]]} [summary [software-forwarded]] [vrf [vrf-name | all]]
```

### Syntax Description

- **group**: Group address for route.
- **source**: Source address for route.
- **summary**: (Optional) Displays route counts and packet rates.
- **software-forwarded**: (Optional) Displays software-switched route counts only.
- **vrf**: (Optional) Applies to a virtual routing and forwarding (VRF) instance.
- **vrf-name**: VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all**: Specifies all VRFs.

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about IPv4 multicast routes:

```
switch(config)# show ip mroute
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 04:18:55, pim ip
    Incoming interface: Null, RPF nbr: 0.0.0.0
    Outgoing interface list: (count: 0)

switch(config)#
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show ip mroute</td>
<td>Displays summary information about IPv4 multicast routes.</td>
</tr>
<tr>
<td>summary</td>
<td></td>
</tr>
</tbody>
</table>
show ip mroute summary

To display summary information about IPv4 multicast routes, use the `show ip mroute summary` command.

```
show ip mroute summary [count | software-forwarded] [vrf {vrf-name | all}]
show ip mroute [group] summary [software-forwarded] [vrf {vrf-name | all}]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>count</strong></td>
<td>(Optional) Displays only route counts.</td>
</tr>
<tr>
<td><strong>software-forwarded</strong></td>
<td>(Optional) Displays software-switched route counts only.</td>
</tr>
<tr>
<td><strong>vrf</strong></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><strong>vrf-name</strong></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><strong>all</strong></td>
<td>Specifies all VRFs.</td>
</tr>
<tr>
<td><strong>group</strong></td>
<td>(Optional) Specifies a group address for a route.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display summary information about IPv4 multicast routes:

```
switch(config)# show ip mroute summary
IP Multicast Routing Table for VRF 'default'

Total number of routes: 1
Total number of (*,G) routes: 0
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 0, rough average sources per group: 0.0

Group: 232.0.0.0/8, Source count: 0
Source  packets  bytes  aps  pps  bit-rate  oifs
(*,G)  0  0  0  0  0.000  bps  0
```

This example shows how to display the number of IPv4 multicast routes:

```
switch(config)#
```
switch# show ip mroute summary count
IP Multicast Routing Table for VRF "default"

Total number of routes: 2
Total number of (*,G) routes: 1
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 1, rough average sources per group: 0.0
switch#

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>show ip mroute</td>
<td>Displays information about IPv4 multicast routes.</td>
</tr>
</tbody>
</table>
show ip pim event-history

To display information in the IPv4 Protocol Independent Multicast (PIM) event history buffers, use the show ip pim event-history command.

```
show ip pim event-history { errors | msgs | statistics }
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>errors</td>
<td>Displays events of type error.</td>
</tr>
<tr>
<td>msgs</td>
<td>Displays events of type msg.</td>
</tr>
<tr>
<td>statistics</td>
<td>Displays events of type statistics.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Examples

This example shows how to display information in the IPv4 PIM msgs event history buffer:

```
switch(config)# show ip pim event-history msgs
Msg events for PIM Process
1) Event:E_DEBUG, length:38, at 165671 usecs after Sat Apr 12 08:35:02 2008
   [100] : nvdb: transient thread created

2) Event:E_DEBUG, length:38, at 165018 usecs after Sat Apr 12 08:35:02 2008
   [100] : nvdb: create transient thread

3) Event:E_DEBUG, length:79, at 165014 usecs after Sat Apr 12 08:35:02 2008
   [100] : comp-mts-rx opc - from sap 3061 cmd pim_show_internal_event_hist_command

   [100] : nvdb: terminate transaction

5) Event:E_DEBUG, length:46, at 62809 usecs after Sat Apr 12 08:34:25 2008
   [100] : nvdb: pim_show_df_command returned 0x0

6) Event:E_DEBUG, length:38, at 62676 usecs after Sat Apr 12 08:34:25 2008
   [100] : nvdb: transient thread created

7) Event:E_DEBUG, length:38, at 61971 usecs after Sat Apr 12 08:34:25 2008
   [100] : nvdb: create transient thread

   [100] : comp-mts-rx opc - from sap 3055 cmd pim_show_df_command

   [100] : nvdb: _cli_send_my_if_command returned 0x0
```
show ip pim event-history

   [100] : comp-mts-rx opc - from sap 0 cmd _cli_send_my_if_command
   <--Output truncated-->
   switch(config)#

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear ip pim event-history</td>
<td>Clears the contents of the PIM event history buffers.</td>
</tr>
<tr>
<td>ip pim event-history</td>
<td>Configures the size of PIM event history buffers.</td>
</tr>
</tbody>
</table>
show ip pim group-range

To display information about the group ranges for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim group-range` command.

```
show ip pim group-range [group] [vrf {vrf-name | all | default | management}]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>(Optional) Group address.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 PIM group ranges:

```
switch(config)# show ip pim group-range
PIM Group-Range Configuration for VRF "default"
Group-range     Mode    RP-address Shared-tree-only range
232.0.0.0/8     SSM      -            -
switch(config)#
```
show ip pim interface

To display information about the enabled interfaces for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim interface` command.

```
show ip pim interface [brief] [vrf {vrf-name | all | default | management}]
```

```
show ip pim interface ethernet {slot/QSFP-module/port | port-channel
channel-number[.sub_if-number] | vlan vlan-id]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>brief</td>
<td>(Optional) Specifies a brief format for display.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies the default VRF.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies the management VRF.</td>
</tr>
<tr>
<td>ethernet</td>
<td>Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.</td>
</tr>
<tr>
<td>slot/QSFP-module/port</td>
<td>Note The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).</td>
</tr>
<tr>
<td>port-channel number</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>sub_if-number</td>
<td>(Optional) Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN. The range is from 1 to 4094.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display brief information about IPv4 PIM-enabled interfaces:

```
switch# show ip pim interface brief
PIM Interface Status for VRF "default"
```
This example shows how to display information about PIM-enabled interfaces:

```
switch# show ip pim interface ethernet 2/5
PIM Interface Status for VRF "default"
Ethernet2/5, Interface status: protocol-up/link-up/admin-up
   IP address: 192.0.2.3, IP subnet: 192.0.2.0/24
   PIM DR: 192.0.2.3, DR's priority: 1
   PIM neighbor count: 1
   PIM hello interval: 30 secs, next hello sent in: 00:00:20
   PIM neighbor holddown: 105 secs
   PIM configured DR priority: 1
   PIM border interface: no
   PIM GenID sent in Hellos: 0x36a7d6d1
   PIM Hello MD5-AH Authentication: disabled
   PIM Neighbor policy: none configured
   PIM Join-Prune inbound policy: none configured
   PIM Join-Prune outbound policy: none configured
   PIM BFD enabled: no
PIM Interface Statistics, last reset: never
   General (sent/received):
      Hellos: 454/453, JPs: 4/0, Asserts: 0/0
      Grafts: 0/0, Graft-Acks: 0/0
      DF-Offers: 0/0, DF-Winners: 0/0, DF-Backoffs: 0/0, DF-Passes: 0/0
   Errors:
      Checksum errors: 0, Invalid packet types/DF subtypes: 0/0
      Authentication failed: 0
      Packet length errors: 0, Bad version packets: 0, Packets from self: 0
      Packets from non-neighbors: 0
      JPs received on RPF-interface: 0
      (*,G) Joins received with no/wrong RP: 0/0
      (*,G)/(S,G) JPs received for SSM/Bidir groups: 0/0
      JPs filtered by inbound policy: 0
      JPs filtered by outbound policy: 0
switch#
```
show ip pim neighbor

To display information about IPv4 Protocol Independent Multicast (PIM) neighbors, use the show ip pim neighbor command.

```
show ip pim neighbor [ethernet slot[/QSFP-module/]port | port-channel channel-number[/sub_if-number] | vlan vlan-id | [neighbor-addr] [vrf {vrf-name | all | default | management}]
```

**Syntax Description**

- **ethernet slot[/QSFP-module/]port** (Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128.
  
  **Note** The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).

- **port-channel number** (Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **sub_if-number** (Optional) Subinterface number. The range is from 1 to 4093.

- **vlan vlan-id** Specifies the VLAN. The range is from 1 to 4094.

- **neighbor-addr** (Optional) IP address of a neighbor.

- **vrf** (Optional) Applies to a virtual routing and forwarding (VRF) instance.

- **vrf-name** VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.

- **all** Specifies that all VRF entries be cleared from the IPv4 multicast routing table.

- **default** Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.

- **management** Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

**Command Default** None

**Command Modes** Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines** This command requires the LAN Base Services license.

**Examples** This example shows how to display information about PIM neighbors:
```
switch(config)# show ip pim neighbor
PIM Neighbor Status for VRF "default"

<table>
<thead>
<tr>
<th>Neighbor</th>
<th>Interface</th>
<th>Uptime</th>
<th>Expires</th>
<th>DR</th>
<th>Bidir-Capable</th>
<th>BFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.0.2.2</td>
<td>port-channel2000</td>
<td>03:43:40</td>
<td>00:01:21</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.9</td>
<td>port-channel2001</td>
<td>03:43:41</td>
<td>00:01:35</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.1</td>
<td>Ethernet1/26</td>
<td>03:43:44</td>
<td>00:01:33</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.2</td>
<td>Ethernet2/5</td>
<td>03:43:45</td>
<td>00:01:34</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.3</td>
<td>Ethernet2/6</td>
<td>03:43:45</td>
<td>00:01:19</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.4</td>
<td>Ethernet2/7</td>
<td>03:43:45</td>
<td>00:01:39</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.5</td>
<td>Ethernet3/11</td>
<td>03:43:46</td>
<td>00:01:35</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>192.0.2.6</td>
<td>Ethernet3/12</td>
<td>03:43:46</td>
<td>00:01:34</td>
<td>1</td>
<td>no</td>
<td>n/a</td>
</tr>
</tbody>
</table>
```

```
**show ip pim oif-list**

To display information about IPv4 Protocol Independent Multicast (PIM) interfaces for a group, use the `show ip pim oif-list` command.

```
show ip pim oif-list group [source] [vrf {vrf-name | all | default | management}]
```

**Syntax Description**

- **group** Group address.
- **source** (Optional) Source address.
- **vrf** (Optional) Applies to a virtual routing and forwarding (VRF) instance.
- **vrf-name** VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all** Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
- **default** Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
- **management** Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display IPv4 PIM interfaces for a group:

```
switch(config)# show ip pim oif-list 232.0.0.0
PIM OIF-List for VRF default
(*, 232.0.0.0/8)
   Incoming interface: Null0, RPF nbr 0.0.0.0
   Timeout interval: 66 secs left
   Oif-list (count: 0):
   Timeout-list (count: 0):
   Immediate-list (count: 0):
   Immediate-timeout-list (count: 0):
   Assert-lost-list (count: 0):
switch(config)#
```
show ip pim policy statistics auto-rp

To display information about the Auto-RP policy statistics for IPv4 Protocol Independent Multicast (PIM), use the show ip pim policy statistics auto-rp command.

```
show ip pim policy statistics auto-rp [rp-candidate-policy | mapping-agent-policy] [vrf {vrf-name | all | default | management}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rp-candidate-policy</td>
<td>Specifies candidate-RP messages.</td>
</tr>
<tr>
<td>mapping-agent-policy</td>
<td>Specifies mapping agent messages.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about IPv4 PIM policy statistics:

```
switch(config)# show ip pim policy statistics auto-rp rp-candidate-policy
```
show ip pim policy statistics bsr

To display information about the bootstrap router (BSR) policy statistics for IPv4 Protocol Independent multicast (PIM), use the `show ip pim policy statistics bsr` command.

```
show ip pim policy statistics bsr { bsr-policy | rp-candidate-policy } [ vrf { vrf-name | all | default | management } ]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bsr-policy</td>
<td>Specifies BSR messages.</td>
</tr>
<tr>
<td>rp-candidate-policy</td>
<td>Specifies candidate-RP messages.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about IPv4 PIM policy statistics:

```
switch(config)# show ip pim policy statistics bsr bsr-policy
```
show ip pim policy statistics jp-policy

To display information about the join-prune policy statistics for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim policy statistics jp-policy` command.

```
show ip pim policy statistics jp-policy {ethernet slot/[QSFP-module/]port | port-channel channel-number[.sub_if-number] | vlan vlan-id}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet slot/[QSFP-module/]port</td>
<td>Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSFP-module number is from 1 to 4. The port number is from 1 to 128. Note: The QSFP-module number applies only to the QSFP+ Generic Expansion Module (GEM).</td>
</tr>
<tr>
<td>port-channel number</td>
<td>Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.</td>
</tr>
<tr>
<td>sub_if-number</td>
<td>(Optional) Subinterface number. The range is from 1 to 4093.</td>
</tr>
<tr>
<td>vlan vlan-id</td>
<td>Specifies the VLAN. The range is from 1 to 4094.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSFP+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about PIM policy statistics:

```
switch(config)# show ip pim policy statistics jp-policy ethernet 2/12
```
show ip pim policy statistics neighbor-policy

To display information about the neighbor policy statistics for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim policy statistics neighbor-policy` command.

```
show ip pim policy statistics neighbor-policy { ethernet slot[/QSF module/]port | port-channel channel-number[.sub_if-number] | vlan vlan-id }
```

**Syntax Description**

- **ethernet slot[/QSF module/]port**
  - Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255. The QSF module number is from 1 to 4. The port number is from 1 to 128.
  - **Note**: The QSF module number applies only to the QSF+ Generic Expansion Module (GEM).

- **port-channel number**
  - Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.

- **sub_if-number**
  - (Optional) Subinterface number. The range is from 1 to 4093.

- **vlan vlan-id**
  - Specifies the VLAN. The range is from 1 to 4094.

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0(2)N1(2)</td>
<td>Support for the QSF+ GEM was added.</td>
</tr>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 PIM policy statistics:

```
switch(config)# show ip pim policy statistics neighbor-policy ethernet 2/12
```
show ip pim policy statistics register-policy

To display information about the register policy statistics for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim policy statistics register-policy` command.

```
show ip pim policy statistics register-policy [vrf {vrf-name | all | default | management}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>vrf</th>
<th>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
<td></td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
<td></td>
</tr>
<tr>
<td>default</td>
<td>Specifies the default VRF.</td>
<td></td>
</tr>
<tr>
<td>management</td>
<td>Specifies the management VRF.</td>
<td></td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about PIM policy statistics:

```
switch(config)# show ip pim policy statistics register-policy vrf all
```
show ip pim route

To display information about the routes for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim route` command.

```
show ip pim route {source group | group [source]} [vrf {vrf-name | all | default | management}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>source</code></td>
<td>Source address.</td>
</tr>
<tr>
<td><code>group</code></td>
<td>Group address.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies that all VRF entries be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
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<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display IPv4 PIM routes:

```
switch(config)# show ip pim route 232.0.0.0
PIM Routing Table for VRF "default" - 1 entries

(*, 232.0.0.0/8), expires 00:02:15
  Incoming interface: Null10, RPF nbr 0.0.0.0
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Immediate-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 3, JP-holdtime round-up: 3

switch(config)#
```
**show ip pim rp**

To display information about the rendezvous points (RPs) for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim rp` command.

```
show ip pim rp [group] [vrf {vrf-name | all | default | management}]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>group</code></td>
<td>(Optional) Group address.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies all VRFs.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Specifies the default VRF.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>Specifies the management VRF.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 PIM RPs:

```
switch(config)# show ip pim rp
PIM RP Status Information for VRF "default"
BSR disabled
Auto-RP disabled
BSR RP Candidate policy: None
BSR RP policy: None
Auto-RP Announce policy: None
Auto-RP Discovery policy: None

switch(config)#
```
show ip pim rp-hash

To display information about the RP-hash values for IPv4 Protocol Independent Multicast (PIM), use the show ip pim rp-hash command.

```
show ip pim rp-hash group [vrf {vrf-name | all | default | management}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>group</code></td>
<td>Group address for RP lookup.</td>
</tr>
<tr>
<td><code>vrf</code></td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td><code>vrf-name</code></td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td><code>all</code></td>
<td>Specifies all VRFs.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Specifies the default VRF.</td>
</tr>
<tr>
<td><code>management</code></td>
<td>Specifies the management VRF.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about IPv4 PIM RP-hash values:

```
switch(config)# show ip pim rp-hash 224.1.1.1
```
show ip pim statistics

To display information about the packet counter statistics for IPv4 Protocol Independent Multicast (PIM), use the `show ip pim statistics` command.

```
show ip pim statistics [vrf {vrf-name | all | default | management}]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf</td>
<td>(Optional) Applies to a virtual routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all VRFs.</td>
</tr>
<tr>
<td>default</td>
<td>Specifies the default VRF.</td>
</tr>
<tr>
<td>management</td>
<td>Specifies the management VRF.</td>
</tr>
</tbody>
</table>

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about IPv4 PIM statistics (if PIM is not in vPC mode, the vPC statistics are not displayed):

```
switch(config)# show ip pim statistics
PIM Global Counter Statistics for VRF:default, last reset: never
  Register processing (sent/received):
    Registers: 0/0, Null registers: 0/0, Register-Stops: 0/0
    Registers received and not RP: 0
    Registers received for SSM groups: 0
  BSR processing (sent/received):
    Bootstraps: 0/0, Candidate-RPs: 0/0
    BSs from non-neighbors: 0, BSs from border interfaces: 0
    BS length errors: 0, BSs which RPF failed: 0
    BSs received but not listen configured: 0
    Cand-RPs from border interfaces: 0
    Cand-RPs received but not listen configured: 0
  Auto-RP processing (sent/received):
    Auto-RP Announces: 0/0, Auto-RP Discoveries: 0/0
    Auto-RP RPF failed: 0, Auto-RP from border interfaces: 0
    Auto-RP invalid type: 0, Auto-RP TTL expired: 0
    Auto-RP received but not listen configured: 0
  General errors:
    Control-plane RPF failure due to no route found: 0
```
show ip pim statistics

Data-plane RPF failure due to no route found: 0
Data-plane no multicast state found: 0
Data-plane create route state count: 0
vPC packet stats:
  assert requests sent: 0
  assert requests received: 0
  assert request send error: 0
  assert response sent: 0
  assert response received: 0
  assert response send error: 0
  assert stop sent: 0
  assert stop received: 0
  assert stop send error: 0
  rpf-source metric requests sent: 0
  rpf-source metric requests received: 0
  rpf-source metric request send error: 0
  rpf-source metric response sent: 0
  rpf-source metric response received: 0
  rpf-source metric response send error: 0
  rpf-source metric rpf change trigger sent: 0
  rpf-source metric rpf change trigger received: 0
  rpf-source metric rpf change trigger send error: 0

switch(config)#
show ip pim vrf

To display information about IPv4 Protocol Independent Multicast (PIM) by virtual routing and forwarding (VRF) instance, use the `show ip pim vrf` command.

```
show ip pim vrf [vrf-name | all | default | detail | management]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf-name</td>
<td>(Optional) VRF name. The name can be a maximum of 32 alphanumeric characters</td>
</tr>
<tr>
<td></td>
<td>and is case sensitive.</td>
</tr>
<tr>
<td>all</td>
<td>(Optional) Specifies all VRFs.</td>
</tr>
<tr>
<td>default</td>
<td>(Optional) Specifies the default VRF.</td>
</tr>
<tr>
<td>detail</td>
<td>(Optional) Displays detailed PIM VRF information.</td>
</tr>
<tr>
<td>management</td>
<td>(Optional) Specifies the management VRF.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 PIM by VRF:

```
switch(config)# show ip pim vrf
PIM Enabled VRF
VRF Name   VRF     Table     Interface     BFD
ID         ID      Count     Enabled
default    1        0x000000001 1          no
```

```
switch(config)#
```

This example shows how to display the detailed information about IPv4 PIM by VRF:

```
switch# show ip pim vrf detail
PIM Enabled VRF
VRF Name   VRF     Table     Interface     BFD
ID         ID      Count     Enabled
default    1        0x000000001 1          no
```

- State Limit: None
- Register Rate Limit: none
- Shared tree ranges: none
- (S,G)-expiry timer: not configured
- (S,G)-list policy: none
- (S,G)-expiry timer config version 0, active version 0
Pre-build SPT for all (S,G)s in VRF: disabled

switch#
show ip static-route

To display static routes from the unicast Routing Information Base (RIB), use the `show ip static-route` command.

```
show ip static-route [vrf {vrf-name | all | default | management}]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf vrf-name</td>
<td>(Optional) Specifies the virtual routing and forwarding (VRF) context name. The name can be any case-sensitive, alphanumeric string up to 32 characters.</td>
</tr>
<tr>
<td>all</td>
<td>(Optional) Specifies all VRF instances.</td>
</tr>
<tr>
<td>default</td>
<td>(Optional) Specifies the default VRF.</td>
</tr>
<tr>
<td>management</td>
<td>(Optional) Specifies the management VRF.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Examples**

This example shows how to display the static routes:

```
switch(config)# show ip static-route
Static-route for VRF "default"(1)
IPv4 Unicast Static Routes:
Total number of routes: 0, unresolved: 0
switch(config)#
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip route</td>
<td>Configures a static route.</td>
</tr>
</tbody>
</table>
show routing ip multicast event-history

To display information in the IPv4 Multicast Routing Information Base (MRIB) event history buffers, use the `show routing ip multicast event-history` command.

```
show routing ip multicast event-history [cli | errors | mfdm-debugs | mfdm-stats | msgs | rib | statistics | vrf]
```

**Syntax Description**

- **cli**: Displays the event history buffer of type CLI.
- **errors**: Displays the event history buffer of type errors.
- **mfdm-debugs**: Displays the event history buffer of type multicast FIB distribution (MFDM).
- **mfdm-stats**: Displays the event history buffer of type MFDM sum.
- **msgs**: Displays the event history buffer of type msgs.
- **rib**: Displays the event history buffer of type RIB.
- **statistics**: Displays information about the event history buffers.
- **vrf**: Displays the event history buffer of type virtual routing and forwarding (VRF).

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Examples**

This example shows how to display information in the MRIB msgs event history buffer:

```
switch(config)# show routing ip multicast event-history msgs
Msg events for MRIB Process
   [100] : nvdb: transient thread created

   [100] : nvdb: create transient thread

   [100] : comp-mts-rx opc - from sap 3210 cmd mrib_internal_event_hist_command

   [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F217E, Ret:SUCCESS
   Src:0x00000101/214, Dst:0x00000101/1203, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x000F217B, Sync:NONE, Payloadsize:148
   Payload: 0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00

   [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F188B, Ret:SUCCESS
   Src:0x00000101/214, Dst:0x00000101/1203, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x000F1888, Sync:NONE, Payloadsize:148
```
show routing ip multicast event-history

Payload:
0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00
   [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F0DF0, Ret:SUCCESS
   Src:0x00000010/214, Dst:0x00000010/1203, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x000F0DED, Sync:NONE, Payloadsize:148
   Payload:
   0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00
   [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F0493, Ret:SUCCESS
   <--Output truncated-->
switch(config)#

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ip routing multicast</td>
<td>Configures the size of the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td></td>
<td>event-history</td>
<td></td>
</tr>
<tr>
<td></td>
<td>clear ip routing</td>
<td>Clears information in the IPv4 MRIB event history buffers.</td>
</tr>
<tr>
<td></td>
<td>multicast</td>
<td></td>
</tr>
<tr>
<td></td>
<td>event-history</td>
<td></td>
</tr>
</tbody>
</table>

Cisco Nexus 5500 Series NX-OS Multicast Routing Command Reference
show routing multicast

To display information about IPv4 multicast routes, use the `show routing multicast` command.

```
show routing [ip | ipv4] multicast [vrf {vrf-name | all | default | management}] 
{{source group} | {group [source]}}
```

**Syntax Description**

- **ip** (Optional) Specifies IPv4 routes.
- **ipv4** (Optional) Specifies IPv4 routes.
- **vrf** (Optional) Applies to a virtual routing and forwarding (VRF) instance.
- **vrf-name** VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
- **all** Specifies all VRFs.
- **default** Specifies the default VRF.
- **management** Specifies the management VRF.
- **source** Source address for routes.
- **group** Group address for routes.

**Command Default**
None

**Command Modes**
Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
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<tbody>
<tr>
<td>5.2(1)N1(1)</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 multicast routes:

```
switch(config)# show routing multicast
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 05:11:19, pim ip
   Incoming interface: Null, RPF nbr: 0.0.0.0
   Outgoing interface list: (count: 0)

switch(config)#
```
show routing multicast clients

To display information about IPv4 multicast routing clients, use the show routing multicast clients command.

```
show routing [ip | ipv4] multicast clients [client-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip</td>
<td>(Optional) Specifies IPv4 multicast clients.</td>
</tr>
<tr>
<td>ipv4</td>
<td>(Optional) Specifies IPv4 multicast clients.</td>
</tr>
<tr>
<td>client-name</td>
<td>(Optional) One of the following multicast routing client names:</td>
</tr>
<tr>
<td></td>
<td>- mrib</td>
</tr>
<tr>
<td></td>
<td>- igmp</td>
</tr>
<tr>
<td></td>
<td>- static</td>
</tr>
<tr>
<td></td>
<td>- msdp</td>
</tr>
<tr>
<td></td>
<td>- ip</td>
</tr>
<tr>
<td></td>
<td>- pim</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
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**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about IPv4 multicast clients:

```
switch(config)# show routing multicast clients pim
IP Multicast Routing Client information

Client: pim, client-id: 5, pid: 5296, mts-sap: 310
Shared-memory: pim, Notifications: joins prunes rpf delete repopulate
Protocol is ssm owner, bidir owner, shared-only mode owner,
Join notifications: sent 1, fail 0, ack rcvd 1
Prune notifications: sent 0, fail 0, ack rcvd 0
RPF notifications: sent 0, fail 0, ack rcvd 0
Delete notifications: sent 0, fail 0, ack rcvd 0
Repopulate notifications: sent 0, fail 0, ack rcvd 0
Clear mroute notifications: sent 0, fail 0
Add route requests: rcvd 2, ack sent 2, ack fail 0
Delete route requests: rcvd 0, ack sent 0, ack fail 0
Update route requests: rcvd 0, ack sent 0, ack fail 0
```
show routing multicast clients

MTS update route requests: rcvd 0, ack sent 0, ack fail 0
Per VRF notification markers: 1

switch(config)#
show running-config pim

To display information about the running-system configuration for IPv4 Protocol Independent Multicast (PIM), use the `show running-config pim` command.

```
show running-config pim [all]
```

### Syntax Description

| Syntax Description | all | (Optional) Displays configured and default information. |

### Command Default

None

### Command Modes

Any command mode

### Command History

<table>
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</table>

### Usage Guidelines

This command requires the LAN Base Services license.

### Examples

This example shows how to display information about the IPv4 PIM running-system configuration:

```
switch(config)# show running-config pim

!Command: show running-config pim
!Time: Sat Apr 12 09:15:11 2008

version 5.2(1)N1(1)
feature pim
ip pim ssm range 232.0.0.0/8
interface Vlan20
  ip pim sparse-mode

switch(config)#
```
show startup-config pim

To display information about the startup-system configuration for IPv4 Protocol Independent Multicast (PIM), use the `show startup-config pim` command.

   show startup-config pim [all]

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Optional) Displays configured and default information.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Any command mode

**Command History**

<table>
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**Usage Guidelines**

This command requires the LAN Base Services license.

**Examples**

This example shows how to display information about the startup-system configuration for IPv4 PIM:

    switch(config)# show startup-config pim