Cisco Nexus 3548 Switch NX-OS Multicast Routing Command Reference

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Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 3548 Switch NX-OS Multicast Routing Command Reference*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

- Audience, page 1
- Document Conventions, page 1
- Related Documentation, page 2
- Documentation Feedback, page 3
- Obtaining Documentation and Submitting a Service Request, page 3

Audience

This publication is for experienced network administrators who configure and maintain Cisco Nexus Series switches.

Document Conventions

Command descriptions use these conventions:

Convention	Description
boldface font	Commands and keywords are in boldface.
italic font	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

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

This document uses the following conventions:

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

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation

Documentation for the Cisco Nexus 3000 Series Switch is available at the following URL:

http://www.cisco.com/en/US/products/ps11541/tsd_products_support_series_home.html

The documentation set is divided into the following categories:

Release Notes

The release notes are available at the follwing URL:

http://www.cisco.com/en/US/products/ps11541/prod_release_notes_list.html

Installation and Upgrade Guides

The installation and upgrade guides are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_installation_guides_list.html

Command References

The command references are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_command_reference_list.html

Technical References

The technical references are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_technical_reference_list.html

Configuration Guides

The configuration guides are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/products_installation_and_configuration_guides_list.html

Error and System Messages

The system message reference guide is available at the following URL:

http://www.cisco.com/en/US/products/ps11541/products_system_message_guides_list.html

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to nexus3k-docfeedback@cisco.com. We appreciate your feedback.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed. The RSS feeds are a free service.

New and Changed Information

This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 3548 Switch NX-OS Multicast Routing Command Reference*. The latest version of this document is available at the following Cisco website:

http://www.cisco.com/en/US/products/ps11541/tsd_products_support_series_home.html

To check for additional information about this Cisco NX-OS Release, see the *Cisco Nexus 3000 Series Switch Release Notes* available at the following Cisco website:

http://www.cisco.com/en/US/products/ps11541/prod_release_notes_list.html

The following table summarizes the new and changed features for Cisco NX-OS Release 5.x and Release 6.x and tells you where they are documented.

Table 1 New and Changed Information for Release 5.x and Release 6.x

Feature	Description	Changed in Release	Where Documented
New command **ip multicast rpf select vrf**	To support RPF selection in a different VRF, a new command, **ip multicast rpf select vrf** has been added	6.0(2)A8(3)	ip multicast rpf select vrf
CLI command **hardware profile multicast rpf-check-optimization**	The hardware profile multicast prefer-source-tree CLI command has been replaced by the command **hardware profile multicast rpf-check-optimization**.	6.0(2)A6(4)	hardware profile multicast rpf-check-optimization
Multicast Service Reflection: Fast-pass and fast-pass no-rewrite mode	The fast-pass and fast-pass no-rewrite modes are supported for the SR feature.	6.0(2)A6(2)	ip service-reflect mode show forwarding multicast-sr loopback interface

Table 1 New and Changed Information for Release 5.x and Release 6.x (continued)

Feature	Description	Changed in Release	Where Documented
Multicast Service Reflection: Regular Mode	The Multicast Service Reflection (SR) feature provides the capability for users to translate the externally received multicast destination addresses to addresses that confirm to their organization's internal addressing policy. **Note** The multicast service reflect feature is supported only on Cisco Nexus 3548X platforms from Release 6.0(2)A6(1).	6.0(2)A6(1)	hardware profile multicast service-reflect port ip service-reflect mode ip service-reflect destination <G1> to <G2> mask-len <M1> source <S1> to <S2> mask-len <M2> show forwarding multicast-sr loopback interface show forwarding multicast-sr loopback interface
IGMP Snooping Filter	You can filter out IGMP snooping reports and access groups at the interface level. This filtering is based on a prefix-list or a route-map policy.	6.0(2)A4(1)	ip igmp snooping access-group ip igmp snooping report-policy
IPv4 Protocol Independent Multicast (PIM) (*, G) state only and prebuild SPT.	This feature was introduced to create the IPv4 PIM (*, G) state only and enabling prebuild of SPT.	5.0(3)A1(2)	ip pim pre-build-spt ip pim spt-threshold infinity

Multicast Routing Commands

This chapter describes the Cisco NX-OS multicast routing commands available on the Cisco Nexus 3548 switch.

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** | **mtrace** | **policy** | **vrf**}

Syntax Description

cli	Clears the CLI event history buffer.
debugs	Clears the debug event history buffer.
events	Clears the event history buffer.
ha	Clears the high availability (HA) event history buffer.
mtrace	Clears the mtrace event history buffer.
policy	Clears the policy event history buffer.
vrf	Clears the virtual routing and forwarding (VRF) event history buffer.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
ip igmp event-history	Configures the size of the IGMP event history buffers.

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

*	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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip igmp route	Clears IGMP-related information in the IPv4 multicast routing table.
show ip mroute	Displays information about the IPv4 multicast routing 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/port* | **loopback** *if_number* | **port-channel** *number*[*.sub_if_number*]]

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp interface	Displays information about IGMP interfaces.

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

*	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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

The **clear ip igmp 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

Command	Description
clear ip igmp groups	Clears IGMP-related information in the IPv4 multicast routing table.
show ip mroute	Displays information about the IPv4 multicast routing table.

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** | **mfdm** | **mfdm-sum** | **vlan** | **vlan-events**}

Syntax Description

rib	Clears the unicast Routing Information Base (RIB) event history buffer.
mfdm	Clears the multicast FIB distribution (MFDM) event history buffer.
mfdm-sum	Clears the MFDM sum event history buffer.
vlan	Clears the VLAN event history buffer.
vlan-events	Clears the VLAN-events event history buffer.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
ip igmp snooping event-history	Configures the size of the IGMP snooping event history buffers.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping explicit-tracking vlan	Displays explicit host tracking information for IGMPv3.

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

vlan-id	(Optional) VLAN number. The range is from 1 to 3968 and 4049 to 4093.
all	(Optional) Applies to all VLANs.

Command Default

All VLANs

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping statistics vlan	Displays IGMP snooping statistics by VLAN.

clear ip mfwd event-history

To clear the multicast forwarding (MFWD) static routes, use the **clear ip mfwd event-history** command.

clear ip mfwd event-history

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Examples

This example shows how to clear the multicast forwarding static routes configured on the switch:

```
switch# clear ip mfwd event-history
switch#
```

Related Commands

Command	Description
ip mfwd mstatic	Registers multicast forwarding static routes.

clear ip mroute

To clear the multicast routing table, use the **clear ip mroute** command.

clear ip mroute {* | *group* [*source*]} [**vrf** {*vrf-name* | **all** | **default** | **management**}]

Syntax Description

*	Specifies all mismatched routes between the hardware and software multicast routing tables.
group	Multicast group address in the format *A.B.C.D*. **Note** Make sure that you provide an address that is not a reserved multicast address.
source	(Optional) Source (S, G) route.
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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

The **clear routing multicast** command is an alternative form of this command.

This command is used to delete routes from the multicast Forwarding Information Base (FIB). It is generally used to clear the mismatched routes in the hardware and software multicast routing tables. When routes are cleared from the multicast FIB, the individual processes (such as PIM, IGMP) that create the routes would repopulate the routes into the multicast FIB.

The **clear ip mroute *** command does not permanently delete the routes from the multicast routing table. To delete the routes permanently from the multicast routing table, use the following **clear** commands to remove the routes for each process:

- **clear ip pim route**
- **clear ip igmp groups**

This command does not require a license.

Examples

This example shows how to clear the mismatched routes in the multicast routing table:

```
switch# clear ip mroute *
This command does not clear mroutes permanently, Please use clear commands from
 all mroute owners:

Pim : clear ip pim route
IGMP: clear ip igmp groups
IP/MFWD: clear ip mfwd mroute

to avoid owner process from repopulating routes into multicast routing table.

For further information regarding this behavior please check documentation.
switch#
```

Related Commands

Command	Description
clear ip pim route	Clears the routes specific to Protocol Independent Multicast (PIM) for IPv4.
clear ip igmp groups	Clears the IGMP-related information in the IPv4 multicast routing table.
clear routing multicast	Clears the multicast routing table.
show ip mroute	Displays information about the multicast routing table.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
ip msdp event-history	Configures the size of the MSDP event history buffers.
show ip msdp event-history	Displays information in the MSDP event history buffers.

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

peer-address	IP address of the MSDP peer.
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.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

peer-address	IP address of the MSDP peer for the SA policy.
in	Specifies the input policy.
out	Specifies the output policy.
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.
default	(Optional) Specifies that the default VRF entry be cleared from the multicast routing table.
management	(Optional) Specifies that the management VRF entry be cleared from the multicast routing table.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

*	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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip msdp sa-cache	Clears the MSDP SA cache.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip msdp route	Clears the MSDP SA cache.
show ip msdp sa-cache	Displays route information in the MSDP Source-Active cache.

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**]

Syntax Description

peer-address	(Optional) IP address of the MSDP peer.
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.
default	(Optional) Specifies that the default VRF entry be cleared from the multicast routing table.
management	(Optional) Specifies that the management VRF entry be cleared from the multicast routing table.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
ip pim event-history	Configures the size of the PIM event history buffers.
show ip pim event-history	Displays information in the PIM event history buffers.

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*]

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip pim statistics	Displays PIM statistics.

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/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

jp-policy	Specifies statistics for the join-prune policy.
neighbor-policy	Specifies statistics for the neighbor policy.
ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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	Specifies the VLAN.
vlan-id	VLAN number. The range is from 1 to 4094.
register-policy	Specifies statistics for the register policy.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip pim policy statistics	Displays PIM policy statistics.

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

*	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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip pim route	Displays information about PIM specific routes.

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

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip pim statistics	Displays PIM statistics.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
ip routing multicast event-history	Configures the size of the IPv4 MRIB event history buffers.
show routing ip multicast event-history	Displays information in the IPv4 MRIB event history buffers.

clear routing multicast

To clear the IPv4 multicast routing table, use the **clear routing multicast** command.

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

Release	Modification
5.0(3)A1	This command was introduced.

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:

```
switch(config)# clear routing multicast *
switch(config)#
```

Related Commands

Command	Description
clear ip mroute	Clears the multicast routing table.
show routing ip multicast	Displays information about IPv4 multicast routes.

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

Release	Modified
5.0(3)A1	This command was introduced.

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

Command	Description
show running-configuration msdp	Displays the MSDP running configuration information.
show feature	Displays the status of features on a switch.
ip msdp peer	Configures a MSDP peer.

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

Release	Modified
5.0(3)A1	This command was introduced.

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

Command	Description
show running-configuration pim	Displays the PIM running configuration information.
show feature	Displays the status of features on a switch.
ip pim sparse-mode	Enables IPv4 PIM sparse mode on an interface.

hardware profile multicast rpf-check-optimization

To prevent duplication of packets during a switchover from the rendezvous point tree (RPT) to the shortest path tree (SPT), use the **hardware profile multicast rpf-check-optimization** command. To allow duplication of packets, use the **no** form of this command.

hardware profile multicast rpf-check-optimization

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
6.0(2)A6(4)	This command was introduced.

Usage Guidelines

This command applies to the Last Hop Router (LHR) only when the LHR transitions from RPT to SPT. Use this command to ensure that there are no duplicate packets in the hardware when the transition from RPT to SPT is in progress.

Note When multicast rpf-check-optimization is enabled, the NXOS does not install any OIF for the *,G entries to avoid packet duplication during the transition from RPT to SPT or any other potential scenarios where the multicast traffic may be duplicated. The *,G entries still have non-empty OIL in the software that can be displayed in **show ip mroute** CLI output.

Examples

This example shows how to prevent duplication of packets during a RPT to SPT switchover:

```
switch# configure terminal
switch(config)# hardware profile multicast rpf-check-optimized
switch(config)#
```

Related Commands

Command	Description
show ip mroute	Displays information about the *,G entries.

hardware profile multicast service-reflect port

Use the **hardware profile multicast service-reflect port** command to create a multicast service reflect loopback port from the range <1-48>.

Syntax Description

loopback port	Range <1-48> for the loopback port.

Command Default

None

Command Modes

Configuration mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

Use this command to configure the multicast service reflect loopback port for the multicast service reflection feature on the Cisco Nexus 3548X platform switches.

Note The configuration of **hardware profile multicast service-reflect port** is required only for **ip service-reflect mode regular** mode.

Note The selected loopback port is burnt and it is not usable for the regular purpose. A reload is required after configuring the loopback port using the CLI.

Examples

This example shows how to create a multicast service reflect loopback port:

```
switch# configure terminal
switch(config)# hardware profile multicast service-reflect port ?
<1-48> Loopback port-num
switch(config)# hardware profile multicast service-reflect port 12
```

Related Commands

Command	Description
ip service-reflect mode	Configures the multicast service reflect mode.

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

policy-name	Route-map policy name. The route map name can be a maximum of 100 alphanumeric characters.

Command Default

Disabled

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

ip igmp any-query-destination

To configure the switch to allow any destination IP address for IGMP general queries, use the **ip igmp any-query-destination** command. To reset the query to the default, use the **no** form of this command.

ip igmp any-query-destination

no ip igmp any-query-destination

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Examples

This example shows how to configure any destination IP address for IGMP general queries:

```
switch# configure terminal
switch(config)# ip igmp any-query-destination
switch(config)#
```

Related Commands

Command	Description
show running-config igmp	Displays information about the running-system configuration for IGMP.

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
5.0(3)A1	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
switch(config)#
```

This example shows how to disable the enforce router alert option check:

```
switch(config)# no ip igmp enforce-router-alert
switch(config)#
```

Related Commands

Command	Description
show running-config igmp	Displays information about the IGMP running-system configuration.

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 {**clis** | **group-debugs** | **group-events** | **ha** | **interface-debugs** | **interface-events** | **msgs** | **mtrace** | **policy** | **statistics** | **vrf**} **size** *buffer-size*

no ip igmp event-history {**clis** | **group-debugs** | **group-events** | **ha** | **interface-debugs** | **interface-events** | **msgs** | **mtrace** | **policy** | **statistics** | **vrf**} **size** *buffer-size*

Syntax Description

clis	Configures the IGMP CLI event history buffer size.
errors	Configures the error event history buffer size.
group-debugs	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.
interface-debugs	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

Release	Modification
5.0(3)A1	This command was introduced.

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)#
```

Related Commands

Command	Description
clear ip igmp event-history	Clears the contents of IGMP event history buffers.
show ip igmp event-history	Displays information in the IGMP event history buffers.
show running-config igmp	Displays information about the IGMP running-system configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

ip igmp global-leave-ignore-gss-mrt

To use the general Maximum Response Time (MRT) in response to an IGMP global leave message for general queries, use the **ip igmp global-leave-ignore-gss-mrt** command. To reset the query to the default, use the **no** form of this command.

ip igmp global-leave-ignore-gss-mrt

no ip igmp global-leave-ignore-gss-mrt

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

When you use this command, the switch uses the configured Maximum Response Time (MRT) value in group-specific queries against a lower MRT value in response to IGMP global leave messages (IGMP leave reports to group 0.0.0.0).

This command does not require a license.

Examples

This example shows how to set the MRT for IGMP general queries:

```
switch# configure terminal
switch(config)# ip igmp global-leave-ignore-gss-mrt
switch(config)#
```

Related Commands

Command	Description
show running-config igmp	Displays information about the running-system configuration for IGMP.

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

timeout	Timeout in seconds. The range is from 3 to 65,535. The default is 260.

Command Default

The group membership timeout is 260 seconds.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a group membership timeout:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

Release	Modification
5.0(3)A1	This command was introduced.

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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to enable the immediate leave feature:

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

This example shows how to disable the immediate leave feature:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

group	Multicast group IP address.
source *source*	(Optional) Configures a source IP address for the IGMPv3 (S,G) channel.
route-map *policy-name*	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.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

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

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

This example shows how to remove a group binding from an interface:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a query count:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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 **ip igmp last-member-query-response-time** command. To reset the query interval to the default, use the **no** form of this command.

ip igmp last-member-query-response-time *interval*

no ip igmp last-member-query-response-time [*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 second.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp last-member-query-response-time 3
switch(config-if)#
```

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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
5.0(3)A1	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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a querier timeout:

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

Related Commands

Command	Description
ip igmp query-timeout	Configures a querier timeout.
show ip igmp interface	Displays IGMP information about the interface.

ip igmp query-interval

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp query-interval 100
switch(config-if)#
```

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp query-max-response-time 15
switch(config-if)#
```

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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
5.0(3)A1	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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a querier timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
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 switchport
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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to enable sending reports to link-local groups:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
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 switchport
switch(config-if)# no ip igmp report-link-local-groups
switch(config-if)#
```

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

policy-name	Route-map policy name. The route name is a maximum of 100 alphanumeric characters.

Command Default

Disabled

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

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 does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a robustness count:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

By default, snooping is enabled and the **no ip igmp snooping** is hidden.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

By default, snooping is enabled and the **no ip igmp snooping** is hidden.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping access-group

To configure a filter for IGMP snooping access groups based on a prefix-list or route-map policy, use the **ip igmp snooping access-group** command. To remove this filter, use the **no** form of this command.

ip igmp snooping access-group {**prefix-list** | **route-map**} *policy-name* **interface** *type slot/port*

no ip igmp snooping access-group {**prefix-list** | **route-map**} *policy-name* **interface** *type slot/port*

Syntax Description

prefix-list	Specifies the use of a prefix-list policy as a filter.
route-map	Specifies the use of a route-map policy as a filter.
policy-name	Specifies the name of the prefix-list or route-map policy.
interface	Specifies an interface for filtering.
type slot/port	Specifies the type of interface and the slot number and port number.

Command Default

None.

Command Modes

VLAN configuration mode

Command History

Release	Modification
6.0(2)A4	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a filter for IGMP snooping access groups based on a prefix-list policy:

```
switch(config)# ip igmp snooping
switch(config)# vlan configuration 2
switch(config-vlan-config)# ip igmp snooping access-group prefix-list plist interface
ethernet 1/2
```

This example shows how to configure a filter for IGMP snooping access groups based on a route-map policy:

```
switch(config)# ip igmp snooping
switch(config)# vlan configuration 2
switch(config-vlan-config)# ip igmp snooping access-group route-map rmap interface
ethernet 1/2
```

Related Commands

Command	Description
ip igmp snooping report-policy	Filters IGMP snooping reports by prefix-list or route-map policy
show running-config igmp	Displays information about the IGMP running-system configuration.

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 {**mfdm** | **mfdm-sum** | **rib** | **vlan** | **vlan-events** } **size** *buffer-size*

no ip igmp snooping event-history {**mfdm** | **mfdm-sum** | **rib** | **vlan** | **vlan-events**} **size** *buffer-size*

Syntax Description

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.
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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.
5.0(3)A1	Support was added to configure IGMP snooping event history buffers in a switch profile.

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

Command	Description
clear ip igmp snooping event-history	Clears the contents of the IGMP snooping event history buffers.
show ip igmp snooping event-history	Displays information in the IGMP snooping event history buffers.
show running-config igmp	Displays information about the IGMP running-system configuration.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates and configures a switch profile.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.
5.0(3)A1	Support was added to suppress IGMP reports from link-local groups in a switch profile.

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)#
```

This example shows how to enable suppression of IGMP reports from link-local groups in a switch profile:

```
switch# configure sync
Enter configuration commands, one per line. End with CNTL/Z.
switch(config-sync)# switch-profile s5010
Switch-Profile started, Profile ID is 1
```

```
switch(config-sync-sp)# ip igmp snooping link-local-groups-suppression
switch(config-sync-sp)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates and configures a switch profile.

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/port* | **port-channel** *number*[.*sub_if_number*]}

no ip igmp snooping mrouter interface {**ethernet** *slot/port* | **port-channel** *number*[.*sub_if_number*]}

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.
5.0(3)A1	Support was added to configure IGMP snooping Optimized Multicast Flood in a switch profile.

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)#
```

This example shows how to configure OMF in a switch profile:

```
switch# configure sync
Enter configuration commands, one per line. End with CNTL/Z.
switch(config-sync)# switch-profile s5010
Switch-Profile started, Profile ID is 1
switch(config-sync-sp)# ip igmp snooping optimise-multicast-flood
switch(config-sync-sp)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates and configures a switch profile.

ip igmp snooping querier

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.

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

Release	Modification
5.0(3)A1	This command was introduced.

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:

```
switch(config)# vlan 1
switch(config-vlan)# ip igmp snooping querier 192.168.0.106
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 querier
switch(config-vlan)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping report-policy

To configure a filter for IGMP snooping reports based on a prefix-list or route-map policy, use the **ip igmp snooping report-policy** command. To remove this filter, use the **no** form of this command.

ip igmp snooping report-policy {**prefix-list** | **route-map**} *policy-name* **interface** *type slot/port*

no ip igmp snooping report-policy {**prefix-list** | **route-map**} *policy-name* **interface** *type slot/port*

Syntax Description

prefix-list	Specifies the use of a prefix-list policy as a filter.
route-map	Specifies the use of a route-map policy as a filter.
policy-name	Specifies the name of the prefix-list or route-map policy.
interface	Specifies an interface for filtering.
type slot/port	Specifies the type of interface and the slot number and port number.

Command Default

None.

Command Modes

VLAN configuration mode

Command History

Release	Modification
6.0(2)A4	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a filter for IGMP snooping reports based on a prefix-list policy:

```
switch(config)# ip igmp snooping
switch(config)# vlan configuration 2
switch(config-vlan-config)# ip igmp snooping report-policy prefix-list plist interface
ethernet 1/2
```

This example shows how to configure a filter for IGMP snooping reports based on a route-map policy:

```
switch(config)# ip igmp snooping
switch(config)# vlan configuration 2
switch(config-vlan-config)# ip igmp snooping report-policy route-map rmap interface
ethernet 1/2
```

Related Commands

Command	Description
ip igmp snooping access-group	Filters access groups by prefix-list or route-map policy.
show running-config igmp	Displays information about the IGMP running-system configuration.

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.
5.0(3)A1	Support was added to configure IGMP snooping report suppression in a switch profile.

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)#
```

This example shows how to enable limiting the membership report traffic in a switch profile:

```
switch# configure sync
Enter configuration commands, one per line. End with CNTL/Z.
switch(config-sync)# switch-profile s5010
Switch-Profile started, Profile ID is 1
switch(config-sync-sp)# ip igmp snooping report-suppression
switch(config-sync-sp)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates and configures a switch profile.

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/port* | **port-channel** *number*[*.sub_if_number*]}

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

Syntax Description

group	Group IP address.
source *source*	(Optional) Configures a static (S, G) channel for the source IP address.
interface	Specifies an interface for the static group.
ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.

Command Default

None

Command Modes

VLAN configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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)#
```

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

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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

Disbled

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to remove IGMPv3 report suppression:

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

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping syslog-threshold

To configure the syslog threshold for the IP Internet Group Management Protocol (IGMP) snooping table so that a syslog message is generated when the table capacity reaches the specified percentage, use the **ip igmp snooping syslog-threshold** command. To reset the value to the default, use the **no** form of this command.

ip igmp snooping syslog-threshold *percentage*

no ip igmp snooping syslog-threshold

Syntax Description

percentage	Percentage of table capacity. The range is from 1 to 100. The default value is 90 percent.

Defaults

The IP IGMP snooping table threshold is 90 percent.

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to set the syslog threshold to 20 percent for the IP IGMP snooping table:

```
switch# configure terminal
switch(config)# ip igmp snooping syslog-threshold 20
switch(config)#
```

Related Commands

Command	Description
copy running-config startup config	Copies the running configuration to the startup configuration file.
show running-config	Displays the information for the running configuration.

ip igmp snooping v3-report-suppression (switch profile)

To configure IGMPv3 report suppression in a switch profile, 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

Disbled

Command Modes

Switch profile configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure IGMPv3 report suppression in a switch profile:

```
switch# configure sync
Enter configuration commands, one per line. End with CNTL/Z.
switch(config-sync)# switch-profile s5010
Switch-Profile started, Profile ID is 1
switch(config-sync-sp)# ip igmp snooping v3-report-suppression
switch(config-sync-sp)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates and configures a switch profile.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config-vlan)#
```

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
switch(config-vlan)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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*

Syntax Description

group	IPv4 multicast group range. By default, the group prefix range is 232.0.0.0/8. To modify the IPv4 Protocol Independent Multicast (PIM) Source Specific Multicast (SSM) range, see the **ip pim ssm range** command.
source	IP multicast address source.

Command Default

None

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	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(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(config)# no ip igmp ssm-translate 232.0.0.0/8 10.1.1.1
switch(config)#
```

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a query count:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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*]

Syntax Description

interval	Query interval in seconds. The range is from 1 to 18,000. The default is 31.

Command Default

The query interval is 31 seconds.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a startup query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp startup-query-interval 25
switch(config-if)#
```

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

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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

max-states	Maximum states allowed. The range is from 1 to 4,294,967,295.
reserved *reserve-policy max-reserved*	(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.
max-reserved	(Optional) Maximum number of (*, G) and (S, G) entries allowed on the interface.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure a state limit:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no switchport
switch(config-if)# ip igmp state-limit 5000
switch(config-if)#
```

This example shows how to remove a state limit:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

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*}

no ip igmp static-oif {*group* [**source** *source*] | **route-map** *policy-name*}

Syntax Description

group	Multicast group IPv4 address. If you specify only the group address, the (*, G) state is created.
source *source*	(Optional) Configures the source IP address for IGMPv3 and creates the (S, G) state. **Note** A source tree is built for the (S, G) state only if you enable IGMPv3.
route-map *policy-name*	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.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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 but if you want to enable Layer 3 interfaces, you must install the LAN Base Services 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

Command	Description
ip pim sparse-mode	Enables IPv4 PIM sparse mode on an interface.
no switchport	Configures the interface as a routed interface.
show ip igmp local-groups	Displays information about the IGMP local group membership.

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

version	Version number. The number is 2 or 3. The default is 2.

Command Default

The version number is 2.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to configure the IGMP version to use on an interface:

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

Related Commands

Command	Description
show ip igmp interface	Displays IGMP information about the interface.

ip mfwd mstatic

To register multicast forwarding (MFWD) static routes, use the **ip mfwd mstatic** command. To remove the MFWD static routes, use the **no** form of this command.

ip mfwd mstatic register

no p mfwd mstatic register

Syntax Description

register	Registers the multicast static routes.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

If the switch receives multicast traffic from a source that is not attached, a (S, G) route is not created and the traffic continuously enters the CPU.

Use this command after configuring multicast reverse path forwarding (RPF) static routes to create (S, G) routes and prevent the multicast traffic from coming to the CPU. For each multicast static route, the register messages are periodically sent to the rendezvous point (RP) and the Multicast Source Discovery Protocol (MSDP) Source-Active (SA) messages are sent to the peer.

This command does not require a license.

Examples

This example shows how to register a multicast forwarding static route:

```
switch(config)# ip mroute 192.0.2.33/24 192.0.2.1
switch(config)# ip mfwd mstatic register
switch(config)#
```

This example shows how to deregister a multicast forwarding static route:

```
switch(config)# no mfwd mstatic register
switch(config)#
```

Related Commands

Command	Description
ip mroute	Configures multicast reverse path forwarding (RPF) static routes.
show ip mroute	Displays information about multicast routes.
show ip igmp snooping	Displays information about IGMP snooping.

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*/*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*/*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.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/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip mroute	Displays information about multicast routes.

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*]

Syntax Description

peer-address	IP address of MSDP peer.
text	Text description.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to remove an MSDP peer description:

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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** | **routes** | **tcp**} **size** *buffer-size*

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

Syntax Description

cli	Configures the CLI event history buffer.
events	Configures the peer-events 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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip routing multicast event-history	Clears information in the IPv4 MRIB event history buffers.
show routing ip multicast event-history	Displays information in the IPv4 MRIB event history buffers.
show running-config msdp	Displays information about the running-system MSDP configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

To display whether flush routes is 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
switch(config)#
```

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

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

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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 *prefix*	Specifies the prefix to match sources against.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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
switch(config)#
```

Related Commands

Command	Description
show ip msdp sources	Displays information about the MSDP learned sources and group limit.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

peer-address	IP address of an MSDP peer in a mesh group.
name	Name of mesh-group.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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
switch(config)#
```

Related Commands

Command	Description
show ip msdp mesh-group	Displays information about MSDP mesh groups.

ip msdp originator-id

To configure the IP address used in the rendezvous point (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 *if-type if-number*

no ip msdp originator-id [*if-type if-number*]

Syntax Description

if-type	Interface type. For more information, use the question mark (?) online help function.
if-number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.

Command Default

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

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

```
switch(config)# no ip msdp originator-id loopback0
switch(config)#
```

Related Commands

Command	Description
show ip msdp summary	Displays a summary of MDSP information.

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

peer-address	IP address of an MSDP peer.
password	MD5 password.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show ip msdp peer	Displays MDSP peer information.

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 MDSP peer, use the **no** form of this command.

ip msdp peer *peer-address* **connect-source** *if-type if-number* [**remote-as** *asn*]

no ip msdp peer *peer-address* [**connect-source** *if-type if-number*] [**remote-as** *asn*]

Syntax Description

peer-address	IP address of the MSDP peer.
connect-source	Configures a local IP address for a TCP connection.
if-type	Interface type. For more information, use the question mark (?) online help function.
if-number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
remote-as *asn*	(Optional) Configures a remote autonomous system (AS) number.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to remove an MSDP peer:

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

Related Commands

Command	Description
show ip msdp summary	Displays a summary of MSDP information.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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 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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

```
switch(config)# no ip msdp sa-limit 192.168.1.10
switch(config)#
```

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to disable filtering:

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

peer-address	IP address of an MSDP peer.
policy-name	Route-map policy name.

Command Default

Disabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to disable filtering:

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to enable an MSDP peer:

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

Related Commands

Command	Description
show ip msdp peer	Displays information about MSDP peers.

ip multicast rpf select vrf

To support RPF selection in a different VRF, use the **ip multicast rpf select vrf** command. To disable the support, use the **no** form of this command.

ip multicast rpf select vrf *src-vrf-name* **group-list** *group-range*

[**no**] **ip multicast rpf select vrf** *src-vrf-name* **group-list** *group-range*

Syntax Description

vrf	Applies to a virtual routing and forwarding (VRF) instance. VRF for a RPF lookup.
src-vrf-name	The source VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
group-list *group-range*	Group range for the RPF select. The format is A.B.C.D/LEN with a maximum length of 32.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
6.0(2)A8(3)	This command was introduced.

Usage Guidelines

None

Examples

This example shows how to use the command:

```
switch(config)# ip multicast rpf select vrf red group-list 224.1.1.0/24
switch(config)#
```

Related Commands

Command	Description
show ip mroute	Displays information about the IPv4 multicast routing 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

anycast-rp	Anycast-RP address of the peer.
rp-addr	Address of the rendezvous point (RP) in the Anycast-RP set.

Command Default

None

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

Each command with the same Anycast-RP address forms an Anycast-RP set. The IP addresses of rendezvous points (RPs) are used for communication with RPs in the set.

To configure PIM Anycast-RP, you must configure the static RP address that will be used as the Anycast-RP address for all routes, and then configure the peer Anycast-RP address.

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 rp-address 192.0.2.3
switch(config)# ip pim anycast-rp 192.0.2.3 192.0.2.31
switch(config)#
```

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
switch(config)#
```

Related Commands

Command	Description
ip pim rp-address	Configures an IPv4 PIM static RP address for a multicast group range.
show ip pim rp	Displays information about PIM RPs.

ip pim auto-rp listen

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

listen	Specifies to listen to Auto-RP messages.
forward	Specifies to forward Auto-RP messages.

Command Default

Disabled

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to disable listening and forwarding of Auto-RP messages:

```
switch(config)# no ip pim auto-rp listen forward
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.

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 *if-type if-number* [**scope** *ttl*]

no ip pim auto-rp mapping-agent [*if-type if-number*] [**scope** *ttl*]

Syntax Description

if-type	Interface type. For more information, use the question mark (?) online help function.
if-number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to remove the Auto-RP mapping agent configuration:

```
switch(config)# no ip pim auto-rp mapping-agent ethernet 2/1
switch(config)#
```

Related Commands

Command	Description
ip pim border	Configures a router to be on the edge of a PIM domain.
ip pim send-rp-discovery	Configures a router as an Auto-RP mapping agent.
show ip pim rp	Displays information about PIM rendezvous points (RPs).

ip pim auto-rp mapping-agent-policy

To enable filtering of IPv4 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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

This example shows how to disable filtering:

```
switch(config)# no ip pim auto-rp mapping-agent-policy
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM rendezvous points (RPs).

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 *if-type if-number* {**group-list** *prefix*} {[**scope** *ttl*] | [**interval** *interval*]}

no ip pim auto-rp rp-candidate [*if-type if-number*] [**group-list** *prefix*} {[**scope** *ttl*] | [**interval** *interval*]}

Syntax Description

if-type	Interface type. For more information, use the question mark (?) online help function.
if-number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
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

Release	Modification
5.0(3)A1	This command was introduced.

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 rendezvous point (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
switch(config)#
```

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
switch(config)#
```

Related Commands

Command	Description
ip pim send-rp-announce	Configures a PIM Auto-RP candidate RP.
show ip pim interface	Displays information about PIM-enabled interfaces.

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.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

You can specify the rendezvous point (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:

```
switch(config)# ip pim auto-rp rp-candidate-policy my_policy
```

This example shows how to disable filtering:

```
switch(config)# no ip pim auto-rp rp-candidate-policy
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.

ip pim border

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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

Release	Modification
5.0(3)A1	This command was introduced.

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)# no switchport
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 switchport
switch(config-if)# no ip pim bsr bsr-policy
switch(config-if)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM rendezvous points (RPs).

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** *if-type if-number* [**hash-len** *hash-len*] [**priority** *priority*]

no ip pim [**bsr**] **bsr-candidate** [*if-type if-number*] [**hash-len** *hash-len*] [**priority** *priority*]

Syntax Description

bsr	(Optional) Specifies the BSR protocol RP-distribution configuration.
if-type	Interface type. For more information, use the question mark (?) online help function.
if-number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
hash-len *hash-len*	(Optional) Specifies the hash mask length used in BSR messages. The range is from 0 to 32. The default is 30.
priority *priority*	(Optional) Specifies the BSR priority used in BSR messages. The range is from 0 to 255. The default is 64.

Command Default

The hash mask length is 30.
The BSR priority is 64.

Command Modes

Global configuration mode

VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM rendezvous points (RPs).

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**]

no ip pim bsr [**forward** [**listen**]]

Syntax Description

forward	Specifies to forward BSR and Candidate-RP messages.
listen	(Optional) Specifies to listen to BSR and Candidate-RP messages.

Command Default

Disabled

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

A router configured as either a candidate rendezvous point (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
switch(config)#
```

Related Commands

Command	Description
ip pim bsr listen	Enables listening to and forwarding of BSR messages.
show ip pim rp	Displays information about PIM RPs.

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**]]

Syntax Description

listen	Specifies to listen to BSR and Candidate-RP messages.
forward	(Optional) Specifies to forward BSR and Candidate-RP messages.

Command Default

Disabled

Command Modes

Global configuration mode

VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

A router configured as either a candidate rendezvous point (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
switch(config)#
```

Related Commands

Command	Description
ip pim bsr forward	Enables listening to and forwarding of BSR messages.
show ip pim rp	Displays information about PIM RPs.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

You can specify the rendezvous point (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
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.

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

priority	Priority value. The range is from 1 to 4294967295. The default is 1.

Command Default

The DR priority is 1.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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)# no switchport
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 switchport
switch(config-if)# no ip pim dr-priority
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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** | **rp** | **vrf**} **size** *buffer-size*

no ip pim event-history {**assert-receive** | **cli** | **hello** | **join-prune** | **null-register** | **packet** | **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.
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

Release	Modification
5.0(3)A1	This command was introduced.

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)#
```

Related Commands

Command	Description
clear ip pim event-history	Clears information in the IPv4 PIM event history buffers.
show ip pim event-history	Displays information in the IPv4 PIM event history buffers.
show running-config pim	Displays information about the running-system PIM configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

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

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

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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*]

Syntax Description

auth-key	MD5 authentication key. You can enter an unencrypted (cleartext) key, or one of these values followed by a space and the MD5 authentication key: • 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

Release	Modification
5.0(3)A1	This command was introduced.

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)# no switchport
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 switchport
switch(config-if)# no ip pim hello-authentication ah-md5
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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.

Command Default

The PIM hello interval is 30,000 milliseconds.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

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)# no switchport
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 switchport
switch(config-if)# no ip pim hello-interval
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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

policy-name	Route-map policy name.
in	Specifies that the system applies a filter only for incoming messages.
out	Specifies that the system applies a filter only for outgoing messages.

Command Default

Disabled; no filter is applied for either incoming or outgoing messages.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

Beginning with Cisco NX-OS Release 4.2(3), 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 rendezvous point (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)# no switchport
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 switchport
switch(config-if)# no ip pim jp-policy
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
logging level ip pim	Configures the logging level of PIM messages.

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

policy-name	Route-map policy name.

Command Default

Forms adjacency with all neighbors.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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)# no switchport
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 switchport
switch(config-if)# no ip pim neighbor-policy
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

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

Release	Modification
5.0(3)A1(2)	This command was introduced.

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 to prebuild the SPTs and maintain the (S,G) states even when the system is not forwarding on these routes.

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)#
```

Related Commands

Command	Description
show ip pim context	Displays information about PIM routes.

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

policy-name	Route-map policy name.

Command Default

Disabled

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim policy statistics register-policy	Displays statistics for PIM Register messages.

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

rate	Rate in packets per second. The range is from 1 to 65,535.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim vrf detail	Displays information about the PIM configuration.

ip pim register-source

To configure the IP source address of a register message to an interface address other than the outgoing interface address of the designated router (DR) leading toward the rendezvous point (RP), use the **ip pim register-source** command. To remove the IP source address register message configuration, use the **no** form of this command.

ip pim register-source [**ethernet** *slot/port* | **loopback** *if_number* | **port-channel** *pc_number* | **tunnel** *tunne_number* | **vlan** *vlan_number*]

no ip pim register-source [**ethernet** *slot/port* | **loopback** *if_number* | **port-channel** *pc_number* | **tunnel** *tunne_number* | **vlan** *vlan_number*]

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface. The range is from 1 to 255.
loopback *if_number*	(Optional) Specifies the virtual interface. The range is from 0 to 1023.
port-channel *pc_number*	(Optional) Specifies the port-channel number. The range is from 1 to 4096.
tunnel *tunnel_number*	(Optional) Specifies the tunnel interface. The range is from 0 to 4095.
vlan *vlan_number*	(Optional) Specifies the VLAN interface. The range is from 1 to 4094.

Command Default

By default, the IP address of the outgoing interface of the DR leading toward the RP is used as the IP source address of a register message.

Command Modes

VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command is required only when the IP source address of a register message is not a uniquely routed address to which the RP can send packets.This situation might occur if the source address is filtered so that packets sent to it are not be forwarded or if the source address is not unique to the network. In these cases, the replies sent from the RP to the source address fail to reach the DR, which results in Protocol Independent Multicast sparse mode (PIM-SM) protocol failures.

If no IP source address is configured or if the configured source address is not in service, the IP address of the outgoing interface of the DR leading toward the RP is used as the IP source address of the register message.

We recommend that you use a loopback interface with an IP address that is uniquely routed throughout the PIM-SM domain.

This command requires the LAN Base Services license.

Examples

This example shows how to configure the IP source address of the register message:

```
switch(config)# vrf context Enterprise
switch(config-vrf)# ip pim register-source ethernet 2/3
switch(config-vrf)#
```

This example shows how to remove the IP source address register message configuration:

```
switch(config-vrf)# no ip pim register-source ethernet 2/3
switch(config-vrf)#
```

Related Commands

Command	Description
show ip pim vrf detail	Displays information about the PIM configuration.

ip pim rp-address

To configure an IPv4 Protocol Independent Multicast (PIM) static rendezvous point (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

rp-address	IP address of a router which is the RP for a group range.
group-list *prefix*	(Optional) Specifies a group range for a static RP.
override	(Optional) Specifies the RP address. The RP address overrides the dynamically learned RP addresses.
route-map *policy-name*	(Optional) Specifies a route-map policy name.

Command Default

The group range is treated in ASM or Bidir mode.

Command Modes

Global configuration mode

VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

The **match ip multicast** command is the only **match** command that is evaluated in the route map. You can the 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.

Matches the group, RP, and RP type specified. You can specify the RP type (ASM or Bidir). This configuration method requires the group and RP specified.

Note BSR RP, auto-RP, and static RP cannot use the group-range keyword. This command allows both permit or deny. Some match mask commands do not allow permit or deny.

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 192.0.2.33 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

Command	Description
show ip pim rp	Displays information about PIM RPs.

ip pim rp-candidate

To configure the router as an IPv4 Protocol Independent Multicast (PIM) bootstrap router (BSR) rendezvous point (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/port* | **loopback** *if_number* | **port-channel** *number*} {**group-list** *prefix*} [**priority** *priority*] [**interval** *interval*]

no ip pim [**bsr**] **rp-candidate** {**ethernet** *slot/port* | **loopback** *if_number* | **port-channel** *number*} {**group-list** *prefix*} [**priority** *priority*] [**interval** *interval*]

Syntax Description

bsr	(Optional) Specifies the BSR protocol RP-distribution configuration.
ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.
priority *priority*	(Optional) Specifies the RP priority used in candidate-RP messages. The range is from 0 to 65,535. The default is 192.
interval *interval*	(Optional) Specifies the BSR message transmission interval in seconds. The range is from 1 to 65,535. The default is 60.

Command Default

The RP priority is 192.
The BSR message interval is 60 seconds.

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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.

Note 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 ethernet 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
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.

ip pim send-rp-announce

To configure an IPv4 Protocol Independent Multicast (PIM) Auto-RP candidate rendezvous point (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/port* | **loopback** *if_number* | **port-channel** *number*} {**group-list** *prefix*} {[**scope** *ttl*] | [**interval** *interval*]}

no ip pim send-rp-announce [{**ethernet** *slot/port* | **loopback** *if_number* | **port-channel** *number*} {**group-list** *prefix*} {[**scope** *ttl*] | [**interval** *interval*]}

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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:

```
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:

```
switch(config)# no ip pim send-rp-announce ethernet 2/1 group-list 239.0.0.0/24
switch(config)#
```

Related Commands

Command	Description
ip pim auto-rp rp-candidate	Configures a PIM Auto-RP candidate RP.
show ip pim interface	Displays information about PIM-enabled interfaces.

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/port* | **loopback** *if_number* | **port-channel** *number*} [**scope** *ttl*]

no ip pim send-rp-discovery [{**ethernet** *slot/port* | **loopback** *if_number* | **port-channel** *number*}] [**scope** *ttl*]

Syntax Description

ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.
ip pim auto-rp mapping-agent	Configures a router as an Auto-RP mapping agent.
ip pim border	Configures a router to be on the edge of a PIM domain.

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

sparse	(Optional) Specifies sparse mode.
seconds	Expiry-timer interval. The range is from 181 to 57600 seconds.
sg-list *route-map*	(Optional) Specifies S,G values to which the timer applies. The route map name can be a maximum of 100 alphanumeric characters.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show ip pim context	Displays information about the PIM configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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)# no switchport
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 switchport
switch(config-if)# no ip pim
switch(config-if)#
```

Related Commands

Command	Description
show ip pim interface	Displays information about PIM-enabled interfaces.

ip pim spt-threshold infinity

To create the IPv4 Protocol Independent Multicast (PIM) (*, G) state only (where no source state is created), use the **ip pim spt-threshold infinity** command. To remove the creation of the shared tree state only, use the **no** form of this command.

ip pim spt-threshold infinity group-list *route-map-name*

no ip pim spt-threshold infinity [**group-list** *route-map-name*]

Syntax Description

route-map-name	Route-map policy name that defines the group prefixes where this feature is applied. A route-map policy name can be a maximum of 100 alphanumeric characters.

Command Default

None

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1(2)	This command was introduced.

Usage Guidelines

You can specify up to 500 sequence lines in a route map.

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.

You must have enabled PIM before you can use the **ip pim spt-threshold infinity** command.

This command requires the Enterprise Services license.

Examples

This example shows how to create the PIM (*, G) state only for the group prefixes defined in my_group_map:

```
switch(config)# ip pim spt-threshold infinity group-list my_group_map
```

This example shows how to remove the creation of the (*, G) state only:

```
switch(config)# no ip pim spt-threshold infinity
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM RPs.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim group-range	Displays information about PIM group ranges.

ip pim ssm range

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**}

no ip pim ssm range {*groups* | **none**}

Syntax Description

groups	List of up to four group range prefixes.
none	Removes all group ranges.

Command Default

The SSM range is 232.0.0.0/8.

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show ip pim group-range	Displays information about PIM group ranges.

ip pim ssm route-map

To configure a group range policy for an Source Specific Multicast (SSM) range, use the **ip pim ssm route-map** command. To remove the SSM group range policy, use the **no** form of this command.

ip pim ssm route-map *policy-name*

no ip pim ssm route-map *policy-name*

Syntax Description

policy-name	Route-map policy name. The name can be a maximum of 63 characters.

Command Default

None

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to configure a group range policy for SSM:

```
switch(config)# ip pim ssm route-map my_ssm_policy
switch(config)#
```

Related Commands

Command	Description
show ip pim route	Displays information about IPV4 PIM routes.

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

max-states	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.
reserved	(Optional) Specifies that a number of state entries are to be reserved for the routes specified in a policy map.
policy-name	(Optional) Route-map policy name.
max-reserved	(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.

Command Default

None

Command Modes

Global configuration mode
VRF configuration mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
switch(config)#
```

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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-debugs** | **mfdm-events** | **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 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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

To display configured buffer sizes, use this command line:

```
switch(config)# show running-config | include "ip routing"
```

This command does not require a license.

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)#
```

Related Commands

Command	Description
clear ip routing multicast event-history	Clears information in the IPv4 MRIB event history buffers.
show routing ip multicast event-history	Displays information in the IPv4 MRIB event history buffers.
show running-config	Displays information about the running-system configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show running-config	Displays information about the running-system configuration.

ip service-reflect mode

Use the **ip service-reflect mode** to configure the multicast service reflect mode. The feature is supported in the following flavors: fas t-pass mode, fast -pas s no-rewrite mode, and regular mode.

The regular mode translates theG1 to G2 interface and it rewrites the MAC address for G2, as per the multicast protocol.

The fast-pass mode translates the G1 to G2 interface and it does not rewrite the MAC address for the G2 interface. The G2 MAC address still holds good as per the multicast protocol, as the /9mask-length restriction keeps the MAC address of the G2 interface same as the MAC address of theG1 interface. The mask-length for the group translation must-be less than equal to 9 for this mode.

The fast-pass mode with no-rewrite option translates the G1 to G2 interface but it does not rewrite the MAC address for the G2 interface. The MAC address of the G2 interface does not hold good as per the multicast protocol. It is up to the user to use this mode option with due diligence, if the MAC address of the G2 interface is not taken account in their topology. The mask-length for the group translation has no restriction.

Syntax Description

regular mode	Regular mode for the SR feature
fast-pass mode	Fast-pass mode for the SR feature
fast-pass no-rewrite mode	Fast-pass no-rewrite mode for the SR feature

Command Default

None

Command Modes

Configuration mode

Command History

Release	Modification
6.0(2)A6(1)	Regular mode command was introduced.
6.0(2)A6(2)	Fast-pass mode command was introduced.

Usage Guidelines

Use the **ip service-reflect mode** to configure the multicast service reflect mode.

Examples

This example shows how to configure the regular mode:

```
switch(config)# ip service-reflect mode regular
```

The following example shows how to configure the fast-pass or fast-pass no-rewrite mode:

(config)# **ip service-reflect mode fast-pass**

OR

(config)# **ip service-reflect mode fast-pass no-rewrite**

See the *Cisco Nexus 3548 Switch NX-OS Multicast Routing Configuration Guide, Release 6.x* for the complete configuration of the SR feature.

Related Commands

Command	Description
hardware profile multicast service-reflect port	Creates a multicast service reflect loopback port from the range <1-48>. This CLI is applicable only for the regular mode.

ip service-reflect destination <G1> to <G2> mask-len <M1> source <S1> to <S2> mask-len <M2>

Use the **ip service-reflect destination <G1> to <G2> mask-len <M1> source <S1> to <S2> mask-len <M2>** command to specify the rule to NAT translate the ingress interface (S1,G1) to an egress interface (S2,G2).

Syntax Description

G1	*A.B.C.D Incoming Group Address (Multicast)*
G2	*A.B.C.D Outgoing Group Address (Multicast)*
M1	*<0-32> Group Mask Length *Default value is 32*
S1	*A.B.C.D Incoming Source Address*
S2	*A.B.C.D Outgoing Source Address*
M2	*<0-32> Source Mask Length *Default value is 32*

Command Default

None

Command Modes

Configuration mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

Use the **ip service-reflect destination <G1> to <G2> mask-len <M1> source <S1> to <S2> mask-len <M2>** command to specify the rule to NAT translate the ingress interface (S1,G1) to an egress interface (S2,G2).

Examples

See the following examples for the default (32) subnet-masks and non-default (less than 32) subnet-masks:

Example 1:

```
#ip service-reflect destination 225.0.0.2 to 226.0.0.2 mask-len 32 source 10.0.0.2 to
12.0.0.2 mask-len 32
```

The configuration rule in example 1 installs the following (S1,G1) to (S2,G2) mapping rules:

```
a. (225.0.0.2, 10.0.0.2) -> (226.0.0.2, 12.0.0.2)
```

Example 2:

```
#ip service-reflect destination 225.0.0.2 to 226.0.0.2 mask-len 31 source 10.0.0.2 to
12.0.0.2 mask-len 31
```

The configuration rule in example 2 installs the following (S1,G1) to (S2,G2) mapping rules:

```
a. (225.0.0.2, 10.0.0.2) -> (226.0.0.2, 12.0.0.2)
b. (225.0.0.3, 10.0.0.3) -> (226.0.0.3, 12.0.0.3)
a. (225.0.0.2, 10.0.0.3) -> (226.0.0.2, 12.0.0.3)
b. (225.0.0.3, 10.0.0.2) -> (226.0.0.3, 12.0.0.2)
```

Example 3:

```
#ip service-reflect destination 225.0.0.2 to 226.0.0.2 mask-len 31 source 10.0.0.2 to
12.0.0.2 mask-len 32
```

The configuration rule in example 3 installs the following (S1,G1) to (S2,G2) mapping rules:

```
a. (225.0.0.2, 10.0.0.2) -> (226.0.0.2, 12.0.0.2)
b. (225.0.0.3, 10.0.0.2) -> (226.0.0.3, 12.0.0.2)
```

ip service-reflect destination <G1> to <G2> mask-len <M1> source <S2>

Use the **ip service-reflect destination <G1> to <G2> mask-len <M1> source <S2>** command to specify the rule to NAT translate the ingress interface (*,G1) to an egress interface (S2,G2).

Syntax Description

G1	*A.B.C.D Incoming Group Address (Multicast)*
G2	*A.B.C.D Outgoing Group Address (Multicast)*
M1	*<0-32> Group Mask Length *Default value is 32*
*	S1: A.B.C.D Incoming Source Address that is not taken into account
S2	*A.B.C.D Outgoing Source Address*

Command Default

None

Command Modes

Configuration mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

Use the **ip service-reflect destination <G1> to <G2> mask-len <M1> source <S2>** command to specify the rule to NAT translate the ingress interface (*,G1) to an egress interface (S2,G2).

Examples

See the following examples for the default (32) subnet-masks:

Example:

```
#ip service-reflect destination 225.0.0.2 to 226.0.0.2 mask-len 32 source 12.0.0.2 // G1
to G2, Any S1 to S2 (12.0.0.2)
```

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

Release	Modification
5.0(3)A1	This command was introduced.

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.

This command requires the LAN Base Services license.

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

Command	Description
copy running-config startup-config	Saves the running configuration to the startup configuration file.
ip address	Sets a primary or secondary IP address for an interface.
show interfaces	Displays interface information.

Multicast Routing Show Commands

This chapter describes the Cisco NX-OS multicast routing **show** commands available on the Cisco Nexus 3548 switch.

Note The internal CLI commands are not supported on the Cisco Nexus Series switches.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
show running-config	Displays the running configuration information.

show forwarding distribution multicast

To display information about multicast Forwarding Information Base (FIB) distribution messages, use the **show forwarding distribution multicast** command.

show forwarding distribution multicast [**messages**]

Syntax Description

messages	(Optional) Displays message information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about multicast distribution messages:

```
switch(config)# show forwarding distribution multicast
Number of Multicast FIB Processes Active: 1
Slot     FIB State
   1        ACTIVE
switch(config)#
```

Related Commands

Command	Description
show running-config	Displays the running configuration information.

show forwarding distribution multicast client

To display information about the multicast Forwarding Information Base (FIB) distribution client, use the **show forwarding distribution multicast client** command.

show forwarding distribution multicast client

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the multicast FIB distribution client:

```
switch# show forwarding distribution multicast client

Number of Clients Registered: 1
Client-name  Client-id  Shared Memory Name
mrib         1          mrib-mfdm
switch#
```

Related Commands

Command	Description
show running-config	Displays the running configuration information.

show forwarding distribution multicast outgoing-interface-list

To display information about the multicast Forwarding Information Base (FIB) outgoing interface (OIF) list, use the **show forwarding distribution multicast outgoing-interface-list** command.

show forwarding distribution multicast outgoing-interface-list {**L2** | **L3**} [*index*]

Syntax Description

L2	Specifies the Layer 2 OIF list.
L3	Specifies the Layer 3 OIF list.
index	(Optional) OIF list index.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the multicast OIF list for Layer 3:

```
switch# show forwarding distribution multicast outgoing-interface-list L3
```

Related Commands

Command	Description
show running-config	Displays the running configuration information.

show forwarding distribution multicast route

To display information about the multicast Forwarding Information Base (FIB) distribution routes, use the **show forwarding distribution multicast route** command.

show forwarding distribution [**ip** | **ipv4**] **multicast route** [**table** *id* | **vrf** *vrf_name*] [[**group** {*group-addr* [*mask*] | *group-prefix*}] [**source** {*source-addr* [*source-mask*] | *source-prefix*}] | **summary**]

Syntax Description

ip	(Optional) Specifies IPV4 information.
ipv4	(Optional) Specifies IPV4 information.
table *id*	(Optional) Specifies the multicast routing table ID. The range is from 0 to 2147483647.
vrf *vrf_name*	(Optional) Specifies a virtual routing and forwarding (VRF) name. The name can be a maximum of 32 alphanumeric characters.
group	(Optional) Specifies an IPv4 multicast group.
group-addr	IPv4 multicast group address.
mask	(Optional) Mask for the group address.
group-prefix	(Optional) IPv4 multicast group prefix.
source	(Optional) Specifies an IPv4 multicast source.
source-addr	IPv4 source address.
source-mask	(Optional) Mask for the group address.
source-prefix	(Optional) IPv4 multicast source prefix.
summary	(Optional) Displays the route counts.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about all the multicast FIB distribution routes:

```
switch(config)# show forwarding distribution multicast route
IPv4 Multicast Routing Table for table-id: 1
Total number of groups: 5
Legend:
   C = Control Route
```

```
   D = Drop Route
   G = Local Group (directly connected receivers)
   O = Drop on RPF Fail
   P = Punt to supervisor
   d = Decap Route

  (*, 224.0.0.0/4), RPF Interface: NULL, flags: D
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

<--Output truncated-->
switch(config)#
```

Related Commands

Command	Description
show running-config	Displays the running configuration information.

show forwarding ipv4 multicast route group <ip-address>

Use the **show forwarding ipv4 multicast route group <ip-address>** CLI command to find the egress counters for each specific multicast route group. The egress counters of the interface can be found, but if multiple groups are there, it is difficult to find the counters for each multicast group. The **show forwarding ipv4 multicast group <ip-address>** is the only command used for it, but the egress counters for this are not supported in Cisco Nexus 3548 Series switches.

show forwarding distribution multicast route group <ip-address>

Syntax Description

ip-address	IP address of the multicast route group.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the egress counters for each specific multicast route group:

```
switch# show forwarding ipv4 multicast route group 225.1.1.1

(*, 225.1.1.1/32), RPF Interface: port-channel8, flags: G
    Received Packets: 349 Bytes: 488600
    Number of Outgoing Interfaces: 1
    Outgoing Interface List Index: 1
      Vlan200 Outgoing Packets:0 Bytes:0

(169.1.1.10/32, 225.1.1.1/32), RPF Interface: port-channel8, flags:
    Received Packets: 1340171 Bytes: 1876239400
    Number of Outgoing Interfaces: 1
    Outgoing Interface List Index: 1
      Vlan200 Outgoing Packets:0 Bytes:0
```

Related Commands

Command	Description
show running-config	Displays the running configuration information.

show forwarding multicast outgoing-interface-list

To display information about the multicast Forwarding Information Base (FIB) outgoing interface (OIF) list, use the **show forwarding multicast outgoing-interface-list** command.

show forwarding multicast outgoing-interface-list [*index*]

Syntax Description

index	(Optional) OIF list index. The OIF list index is from 1 to 65535.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the multicast FIB OIF list:

```
switch# show forwarding multicast outgoing-interface-list
```

Related Commands

Command	Description
ip igmp static-oif	Binds a multicast group to the outgoing interface (OIF).
clear ip igmp interface statistics	Clears the IGMP statistics for an interface.

show forwarding multicast route

To display information about the IPv4 Forwarding Information Base (FIB) multicast routes, use the **show forwarding multicast route** command.

Note Cisco NX-OS 3548 switch does not support per **multicast group statistics** command for the **show forward multicast route** command.

show forwarding [**vrf** {*vrf-name* | **all**}] [**ip** | **ipv4**] **multicast route** {[**group** {*group-addr* [*group-mask*] | *group-prefix*} | **source** {*source-addr* [*source-mask*] | *source-prefix*} | **module** *num* | **vrf** {*vrf-name* | **all**}] | **summary** [**vrf** {*vrf-name* | **all**}]}

Syntax Description

vrf	(Optional) Displays information for a specified 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	Displays information for all VRFs.
ip	(Optional) Specifies IPv4.
ipv4	(Optional) Specifies IPv4.
group	(Optional) Specifies an IPv4 multicast group address.
group-addr	IPv4 multicast group address.
group-mask	(Optional) IPv4 multicast group address mask.
group-prefix	(Optional) IPv4 multicast group prefix.
source	(Optional) Specifies an IPv4 multicast source address.
source-addr	IPv4 multicast source address.
source-mask	IPv4 multicast source address mask.
source-prefix	IPv4 multicast source prefix.
summary	Displays route counts.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the IPv4 multicast FIB routes:

```
switch# show forwarding multicast route
```

This example shows how to display the summary information about the IPv4 multicast FIB routes:

```
switch# show forwarding multicast route summary

IPv4 Multicast Routing Table for Context "default"
Total number of routes: 0
Total number of (*,G) routes: 0
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 0
Group count: 0
Prefix insert fail count: 10
switch#
```

Related Commands

Command	Description
clear ip mroute	Clears the multicast routing table.

show forwarding multicast-sr loopback interface

To display information about the loopback interface, use the **show forwarding multicast-sr loopback interface** command.

show forwarding multicast-sr loopback interface

Syntax Description

This command does not have any arguments.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

Use the **show forwarding multicast-sr loopback interface** command to display information about the loopback interface.

Examples

This example shows how to view the loopback interface list as displayed in the following example:

 # sh forwarding multicast-sr loopback interface

```
Multicast SR loopback interface list
12
```

show hardware profile status

To display the maximum entries in the multicast routing table, use the **show hardware profile status** command.

show hardware profile status

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Examples

This example shows how to display the status of the multicast routing table:

```
switch# show hardware profile status
Warp Mode Hardware table usage:

Max Host Entries = 8192, Used = 625
Max Unicast LPM Entries = 4096, Used = 1963
Max Multicast LPM Entries = 8192, Used (L2:L3)= 7769 (2003:5766)
Max L2 Entries = 8192, Used = 162
switch#
```

Related Commands

Command	Description
hardware profile multicast max-limit	Sets the maximum entries for the multicast routing table.

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** | **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.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
2011 Aug 30 09:10:40.124500 igmp [4421]: : Router-port PSS entry for vlan 1 upda
ted [count 1]
2011 Aug 30 09:09:39.810392 igmp [4421]: : Router-port PSS entry for vlan 1 upda
ted [count 0]
2011 Aug 29 08:44:12.368317 igmp [4421]: : Router-port PSS entry for vlan 1 upda
ted [count 1]
2011 Aug 29 08:39:24.860388 igmp [4421]: : Router-port PSS entry for vlan 1 upda
ted [count 0]
2011 Aug 26 09:52:58.390295 igmp [4421]: : Router-port PSS entry for vlan 1 upda
ted [count 1]
```

```
<--Output truncated-->
switch(config)#
```

Related Commands

Command	Description
clear ip igmp event-history	Clears the contents of the IGMP event history buffers.
ip igmp event-history	Configures the size of IGMP event history buffers.

sh int eth <slot/port> | i rate

Use the **sh int eth <***slot/port***> | i rate** command to check the rate of the stream.

Syntax Description

slot	Slot number on the switch.
port	Port number on the switch.
i rate	Specifies the rate of the stream.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
6.0(2)A6(1)	This command was introduced.

Usage Guidelines

Use this command to check the rate of the stream.

Examples

These examples show how to check the rate of the stream:

 # sh int eth 1/10 | i rate

```
30 seconds input rate 1536904 bits/sec, 3000 packets/sec   \\ 1X of (S1,G1) UDP stream
30 seconds output rate 208 bits/sec, 0 packets/sec
  input rate 1.54 Mbps, 3.00 Kpps; output rate 152 bps, 0 pps
```

 # sh int eth 1/12 | i rate

```
30 seconds input rate 3072112 bits/sec, 5999 packets/sec    \\ 2X Stream
30 seconds output rate 2811704 bits/sec, 5999 packets/sec  \\ 2X Stream
  input rate 3.07 Mbps, 6.00 Kpps; output rate 3.05 Mbps, 6.00 Kpps
```

 # sh int eth 1/11 | i rate

```
30 seconds input rate 160 bits/sec, 0 packets/sec
30 seconds output rate 1683024 bits/sec, 2999 packets/sec  \\ 1X of (S2,G2) UDP stream
  input rate 136 bps, 0 pps; output rate 1.52 Mbps, 3.00 Kpps
```

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

source	Source IP address.
group	(Optional) Multicast IP address of the single group to display.
ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show ip igmp route	Displays information about the IGMP-attached group membership.

show ip igmp interface

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

show ip igmp interface {**ethernet** *slot*/*port* | **port-channel** *channel-number*[.*sub_if-number*] | **vlan** *vlan-id*}

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

Syntax Description

ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.
brief	(Optional) Displays one line status per interface.
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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

This example shows how to display information about IGMP on an interface:

```
switch# show ip igmp interface vlan 5
```

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

```
switch# show ip igmp interface brief
```

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.
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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install the LAN Base Services license.

Examples

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

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

Related Commands

Command	Description
show running-config	Displays information about the running-system configuration.

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

source	Source IP address.
group	(Optional) Multicast IP address of single group to display.
ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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.
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

Release	Modification
5.0(3)A1	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
```

Related Commands

Command	Description
show ip igmp groups	Displays information about the IGMP-attached group membership.

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

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

Command Default

Displays all VLANs.

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about IGMP snooping information on a switch :

```
switch# show ip igmp snooping
Global IGMP Snooping Information:
  IGMP Snooping enabled
  Optimised Multicast Flood (OMF) disabled
  IGMPv1/v2 Report Suppression enabled
  IGMPv3 Report Suppression disabled
  Link Local Groups Suppression enabled

IGMP Snooping information for vlan 1
  IGMP snooping enabled
  Optimised Multicast Flood (OMF) disabled
  IGMP querier present, address: 10.1.1.7, version: 2, interface Ethernet1/13
  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:
    Eth1/11     Eth1/13
switch#
```

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

```
switch# show ip igmp snooping vlan 1
IGMP Snooping information for vlan 1
```

```
  IGMP snooping enabled
  Optimised Multicast Flood (OMF) disabled
  IGMP querier present, address: 10.1.1.7, version: 2, interface Ethernet1/13
  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:
    Eth1/11     Eth1/13
switch#
```

Related Commands

Command	Description
ip mfwd mstatic	Registers IP multicast forwarding (MFWD) static routes.
ip igmp snooping (VLAN)	Enables IGMP snooping on specified VLAN interfaces.

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 {**mfdm** | **mfdm-sum** | **vlan** | **vlan-events**}

Syntax Description

mfdm	Displays the event history buffer of type multicast FIB distribution (MFDM).
mfdm-sum	Displays the event history buffer of type MFDM sum.
vlan	Displays the event history buffer of type VLAN.
vlan-events	Displays the event history buffer of type VLAN events.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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# show ip igmp snooping event-history vlan

 vlan Events for IGMP Snoop process
2011 Sep  2 08:23:06.508225 igmp [4421]: : igmp_cl_output_l2: Before IP api ...
2011 Sep  2 08:23:06.508223 igmp [4421]: : igmp_cl_output_l2: ...
2011 Sep  2 08:23:06.508220 igmp [4421]: : Flooding the packet to <vlan 1> (iif
Ethernet1/11)
2011 Sep  2 08:23:06.508216 igmp [4421]: : Received a v2 leave on Ethernet1/11 f
or group 0.0.0.0
2011 Sep  2 08:23:06.508169 igmp [4421]: : Process a valid IGMP packet
2011 Sep  2 08:23:04.880614 igmp [4421]: : Not STP root, ignoring topology chang
e notification
2011 Sep  2 08:23:04.880605 igmp [4421]: : Received a STP Topology change notifi
cation
2011 Sep  2 08:23:04.508334 igmp [4421]: : igmp_cl_output_l2: Before IP api ...
2011 Sep  2 08:23:04.508332 igmp [4421]: : igmp_cl_output_l2: ...
2011 Sep  2 08:23:04.508330 igmp [4421]: : Flooding the packet to <vlan 1> (iif
Ethernet1/11)
<--Output truncated-->
switch#
```

Related Commands

Command	Description
ip igmp snooping event-history	Configures the size of the IGMP snooping event history buffers.
clear ip igmp snooping event-history	Clears information in the IGMP snooping event history buffers.

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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip igmp snooping explicit-tracking vlan	Clears the IGMP snooping explicit host tracking information for VLANs.
ip igmp snooping explicit-tracking	Enables tracking of IGMPv3 membership reports from individual hosts for each port on a VLAN.

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

source	(Optional) Source address for route.
group	(Optional) Group address for route.
vlan *vlan-id*	(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
detail	(Optional) Displays detailed information for the group.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config igmp	Displays the IGMP running configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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, I - Internal
Vlan  Router-port   Type      Uptime      Expires
1     Eth1/13       D         2d23h       00:04:59

switch(config)#
```

Related Commands

Command	Description
show running-config igmp	Displays the IGMP running configuration.

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	Modification
5.0(3)A1	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# show ip igmp snooping querier
Vlan  IP Address       Version   Expires     Port
1     7.1.1.7          v2        00:03:27    Ethernet1/13
switch#
```

Related Commands

Command	Description
show running-config igmp	Displays the IGMP running configuration.

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**]

Syntax Description

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

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config igmp	Displays the IGMP running configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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"

(*, 226.1.1.27/32), uptime: 04:13:17, igmp ip pim
Incoming interface: Vlan30, RPF nbr: 10.10.30.1, uptime: 04:13:16
Outgoing interface list: (count: 1)
Vlan203, uptime: 04:13:17, igmp


(193.168.1.13/32, 226.1.1.27/32), uptime: 04:13:13, ip mrib pim
Incoming interface: Ethernet1/2, RPF nbr: 10.10.20.1, uptime: 04:13:13
Outgoing interface list: (count: 1)
Vlan203, uptime: 04:13:13, mrib

switch(config)#
```

Related Commands

Command	Description
show ip mroute summary	Displays summary information about IPv4 multicast routes.

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

count	(Optional) Displays only route counts.
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.
group	(Optional) Specifies a group address for a route.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

This example shows how to display the number of IPv4 multicast routes:

```
switch# show ip mroute summary count
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
switch#
```

Related Commands

Command	Description
show ip mroute	Displays information about IPv4 multicast routes.

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**}]

Syntax Description

asn	(Optional) Autonomous system (AS) number.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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

errors	Displays events of type error.
msgs	Displays events of type msg.
statistics	Displays events of type statistics.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

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

Command	Description
clear ip msdp event-history	Clears the contents of the MSDP event history buffers.
ip msdp event-history	Configures the size of MSDP event history buffers.

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**}]

Syntax Description

mesh-group	(Optional) Mesh group name.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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

peer-address	(Optional) IP address of an MSDP peer.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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*}]

Syntax Description

peer-address	IP address of the MSDP peer for the SA policy.
in	Specifies the input policy.
out	Specifies the output policy.
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.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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 SA cache:

```
switch(config)# show ip msdp route
```

Related Commands

Command	Description
clear ip msdp route	Clears routes in the MSDP Source-Active cache.
show ip msdp sa-cache	Displays information about the MSDP SA cache.

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

rp-address	IP address of the RP.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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** | **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

Release	Modification
5.0(3)A1	This command was introduced.

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

Command	Description
clear ip msdp sa-cache	Clears routes in the MSDP Source-Active cache.
show ip msdp route	Displays information about the MSDP SA cache.

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

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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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**}]

Syntax Description

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display summary information about MSDP peers:

```
switch(config)# show ip msdp summary
```

Related Commands

Command	Description
show running-config msdp	Displays information about the MSDP running configuration.

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

errors	Displays events of type error.
msgs	Displays events of type msg.
statistics	Displays events of type statistics.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information in the IPv4 PIM msgs event history buffer:

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

Related Commands

Command	Description
clear ip pim event-history	Clears the contents of the PIM event history buffers.
ip pim event-history	Configures the size of PIM event history buffers.

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

group	(Optional) Group 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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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/port* | **port-channel** *channel-number*[.*sub_if-number*] | **vlan** *vlan-id*}

Syntax Description

brief	(Optional) Specifies a brief format for display.
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.
ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

This example shows how to display information about PIM-enabled interfaces:

```
switch# show ip pim interface ethernet 2/5
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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/port* | **port-channel** *channel-number*[.*sub_if-number*] | **vlan** *vlan-id*] | [*neighbor-addr*]} [**vrf** {*vrf-name* | **all** | **default** | **management**}]

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

rp-candidate-policy	Specifies candidate-RP messages.
mapping-agent-policy	Specifies mapping agent messages.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

bsr-policy	Specifies BSR messages.
rp-candidate-policy	Specifies candidate-RP messages.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*}

Syntax Description

ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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/port* | **port-channel** *channel-number*[*.sub_if-number*] | **vlan** *vlan-id*}

Syntax Description

ethernet *slot/port*	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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**}]

Syntax Description

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.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

source	Source address.
group	Group 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

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
ip pim flush-routes	Removes routes when the IPv4 PIM process is restarted.
show running-config pim	Displays information about the PIM running configuration.

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**}]

Syntax Description

group	(Optional) Group 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 all VRFs.
default	Specifies the default VRF.
management	Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
ip pim rp-address	Configures an IPv4 PIM static RP address for a multicast group range.
ip pim rp-candidate	Configures the router as an IPv4 PIM bootstrap router (BSR) RP candidate.
show running-config pim	Displays information about the PIM running configuration.

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

group	Group address for RP lookup.
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.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

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.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM statistics:

```
switch(config)# show ip pim statistics
```

Related Commands

Command	Description
show running-config pim	Displays information about the PIM running configuration.

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

vrf-name	(Optional) VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	(Optional) Specifies all VRFs.
default	(Optional) Specifies the default VRF.
detail	(Optional) Displays detailed PIM VRF information.
management	(Optional) Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

This example shows how to display the detailed information about IPv4 PIM by VRF:

```
switch# show ip pim vrf detail
```

Related Commands

Command	Description
ip pim state-limit	Configures the maximum number of IPv4 PIM state entries in the current VRF instance.

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-name* | **all** | **default** | **management**]

Syntax Description

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.
all	(Optional) Specifies all VRF instances.
default	(Optional) Specifies the default VRF.
management	(Optional) Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the static routes:

```
switch(config)# show ip static-route
```

Related Commands

Command	Description
ip route	Configures a static route.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch# show routing ip multicast event-history msgs

Msg events for MRIB Process
1) Event:E_DEBUG, length:38, at 724454 usecs after Fri Sep  2 06:56:42 2011
    [100] : nvdb: transient thread created

2) Event:E_DEBUG, length:38, at 723779 usecs after Fri Sep  2 06:56:42 2011
    [100] : nvdb: create transcient thread

3) Event:E_DEBUG, length:76, at 723775 usecs after Fri Sep  2 06:56:42 2011
    [100] : comp-mts-rx opc - from sap 11227 cmd mrib_internal_event_hist_comman
d
4) Event:E_MTS_RX, length:60, at 240798 usecs after Fri Sep  2 06:56:01 2011
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X00A5EDE6, Ret:SUCCESS
<--Output truncated-->
switch#
```

Related Commands

Command	Description
ip routing multicast event-history	Configures the size of the IPv4 MRIB event history buffers.
clear ip routing multicast event-history	Clears information in the IPv4 MRIB event history buffers.

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

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 multicast routes:

```
switch# show routing multicast
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 1w1d, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

switch#
```

Related Commands

Command	Description
ip routing multicast event-history	Configures the size of the IPv4 Multicast Routing Information Base (MRIB) event history buffers.
ip routing multicast holddown	Configures the IPv4 multicast routing initial holddown period.

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

ip	(Optional) Specifies IPv4 multicast clients.
ipv4	(Optional) Specifies IPv4 multicast clients.
client-name	(Optional) One of the following multicast routing client names: • mrib • igmp • static • msdp • ip • pim

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 multicast clients:

```
switch# show routing multicast clients pim
IP Multicast Routing Client information

Client: pim, client-id: 5, pid: 4449, mts-sap: 310
  Shared-memory: pim, Notifications: joins prunes rpf delete repopulate
  Protocol is ssm owner, bidir owner, shared-only mode owner, internal 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
```

```
  MTS update route requests:  rcvd 0, ack sent 0, ack fail 0
   Per VRF notification markers: 1

switch#
```

Related Commands

Command	Description
ip routing multicast event-history	Configures the size of the IPv4 Multicast Routing Information Base (MRIB) event history buffers.
ip routing multicast holddown	Configures the IPv4 multicast routing initial holddown period.

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

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install 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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
show startup-config igmp	Displays information about the IGMP startup configuration.

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**]

Syntax Description

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
show startup-config msdp	Displays information about the MSDP startup configuration.

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

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
show startup-config pim	Displays information about the IPv4 PIM startup configuration.

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**]

Syntax Description

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

Usage Guidelines

This command does not require a license but if you want to enable Layer 3 interfaces, you must install 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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.

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

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
clear ip msdp statistics	Clears the statistics for MSDP peers.

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

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)A1	This command was introduced.

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
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
clear ip pim statistics	Clears PIM statistics counters.