Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference

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Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference*. It also provides information on how to obtain related documentation.

This chapter includes the following sections:

Audience

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

Organization

This reference is organized as follows:

Chapter Title	Description
New and Changed Information	Describes the new and changed features.
C Commands	Describes the Cisco NX-OS multicast routing commands that begin with C.
H Commands	Describes the Cisco NX-OS multicast routing commands that begin with H.
I Commands	Describes the Cisco NX-OS multicast routing commands that begin with I.
l Commands	Describes the Cisco NX-OS multicast routing commands that begin with L.

Chapter Title	Description
M Commands	Describes the Cisco NX-OS multicast routing commands that begin with M.
R Commands	Describes the Cisco NX-OS multicast routing commands that begin with R.
Show Commands	Describes the Cisco NX-OS multicast routing show commands.

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 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.

Tip Means *the following information will help you solve a problem.*

Related Documentation

Cisco NX-OS includes the following documents:

Release Notes

Cisco Nexus 7000 Series NX-OS Release Notes, Release 6.x

NX-OS Configuration Guides

Cisco Nexus 2000 Series Fabric Extender Software Configuration Guide
Cisco Nexus 7000 Series NX-OS Configuration Examples
Cisco Nexus 7000 Series NX-OS FabricPath Configuration Guide
Configuring Feature Set for FabricPath
Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide
Cisco Nexus 7000 Series NX-OS High Availability and Redundancy Guide
Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide
Cisco Nexus 7000 Series NX-OS IP SLAs Configuration Guide
Cisco Nexus 7000 Series NX-OS Layer 2 Switching Configuration Guide
Cisco Nexus 7000 Series NX-OS LISP Configuration Guide
Cisco Nexus 7000 Series NX-OS MPLS Configuration Guide
Cisco Nexus 7000 Series NX-OS Multicast Routing Configuration Guide
Cisco Nexus 7000 Series NX-OS OTV Configuration Guide
Cisco Nexus 7000 Series OTV Quick Start Guide
Cisco Nexus 7000 Series NX-OS Quality of Service Configuration Guide
Cisco Nexus 7000 Series NX-OS SAN Switching Configuration Guide
Cisco Nexus 7000 Series NX-OS Security Configuration Guide
Cisco Nexus 7000 Series NX-OS System Management Configuration Guide
Cisco Nexus 7000 Series NX-OS Unicast Routing Configuration Guide
Cisco Nexus 7000 Series NX-OS Verified Scalability Guide
Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide
Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide
Cisco Nexus 7000 Series NX-OS Virtual Device Context Quick Start
Cisco NX-OS FCoE Configuration Guide for Cisco Nexus 7000 and Cisco MDS 9500

NX-OS Command References

Cisco Nexus 7000 Series NX-OS Command Reference Master Index
Cisco Nexus 7000 Series NX-OS FabricPath Command Reference
Cisco Nexus 7000 Series NX-OS Fundamentals Command Reference
Cisco Nexus 7000 Series NX-OS High Availability Command Reference

Cisco Nexus 7000 Series NX-OS Interfaces Command Reference

Cisco Nexus 7000 Series NX-OS IP SLAs Command Reference

Cisco Nexus 7000 Series NX-OS Layer 2 Switching Command Reference

Cisco Nexus 7000 Series NX-OS LISP Command Reference

Cisco Nexus 7000 Series NX-OS MPLS Command Reference

Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference

Cisco Nexus 7000 Series NX-OS OTV Command Reference

Cisco Nexus 7000 Series NX-OS Quality of Service Command Reference

Cisco Nexus 7000 Series NX-OS SAN Switching Command Reference

Cisco Nexus 7000 Series NX-OS Security Command Reference

Cisco Nexus 7000 Series NX-OS System Management Command Reference

Cisco Nexus 7000 Series NX-OS Unicast Routing Command Reference

Cisco Nexus 7000 Series NX-OS Virtual Device Context Command Reference

Cisco NX-OS FCoE Command Reference for Cisco Nexus 7000 and Cisco MDS 9500

Other Software Documents

Cisco NX-OS Licensing Guide

Cisco Nexus 7000 Series NX-OS MIB Quick Reference

Cisco NX-OS System Messages Reference

Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide

Cisco NX-OS XML Interface User Guide

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to nexus7k-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* at: http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. 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 7000 Series NX-OS Multicast Routing Command Reference*. The latest version of this document is available at the following Cisco website:
http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-command-reference-list.html

To check for additional information about this Cisco NX-OS Release, see the *Cisco NX-OS Release Notes* available at the following Cisco website:
http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-release-notes-list.html

The table below summarizes the new and changed features for the *Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference*.

Table 1 New and Changed Features

Feature	Description	Changed in Release
Multicast performance enhancement	Added the **hardware forwarding shim** command.	6.2(2)
ip igmp snooping max-gq-miss	This command was introduced.	6.2(2)
show ip igmp groups	Changed the position of the **summary** option in the **show ip igmp groups** and **show ip igmp route** set of commands (The **summary** option used to be after the **vrf** option and now it will precede it).	6.1(1)
ip pim register-until-stop	This command was introduced.	5.2(1)
layer-2 multicast lookup mac (Global configuration mode)	This command was introduced.	5.2(1)
layer-2 multicast lookup mac (VLAN configuration mode)	This command was introduced.	5.2(1)
mac address-table multicast	This command was introduced.	5.2(1)
show forwarding distribution l2 multicast vlan	This command was introduced.	5.2(1)
hardware proxy layer-3 replication	This command was introduced.	5.1(1)
hardware proxy layer-3 replication trigger rebalance	This command was introduced.	5.1(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
hardware proxy layer-3 replication rebalance-mode	This command was introduced.	5.1(1)
show hardware proxy layer-3 detail	This command was introduced.	5.1(1)
ip pim rp-address	Added the keyword **override**	5.1(1)
[**ip** | **ipv6**] **pim jp-policy** *policy-name* [**in** | **out**]	Added the keywords **in** and **out**.	4.2(3)
ip pim pre-build-spt	This command was introduced.	4.2(3)
ip pim sg-expiry-timer	This command was introduced.	4.2(3)
[**ip** | **ipv6**] **routing multicast software-replicate**	This command was introduced.	4.2(3)
ip igmp join-group	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ip igmp static-oif	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ip pim rp-address	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ip pim ssm range	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ip routing multicast event-history	Added the keyword **mfdm-events**. Changed the keyword **mfdm** to **mfdm-debugs**.	4.2(1)
[**ip** | **ipv4**] **routing multicast holddown**	This command was introduced.	4.2(1)
ipv6 [**icmp**] **mld join-group**	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ipv6 [**icmp**] **mld static-oif**	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ipv6 pim rp-address	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ipv6 pim ssm range	Added the keyword **route-map** and argument *policy-name*.	4.2(1)
ipv6 routing multicast event-history	Added the keyword **mfdm-events**. Changed the keyword **mfdm** to **mfdm-debugs**.	4.2(1)
clear ip igmp event-history	This command was introduced.	4.2(1)
clear ip igmp groups	This command was introduced.	4.1(2)
clear ip igmp route	This command was introduced.	4.1(2)
clear ip igmp snooping event-history	This command was introduced.	4.2(1)
clear ip msdp event-history	This command was introduced.	4.2(1)
clear ip pim event-history	This command was introduced.	4.2(1)
clear ip pim route	This command was introduced.	4.2(1)
clear ip routing multicast event-history	This command was introduced.	4.2(1)
clear ipv6 mld groups	This command was introduced.	4.2(1)
clear ipv6 mld route	This command was introduced.	4.2(1)
clear ipv6 pim event-history	This command was introduced.	4.2(1)
clear ipv6 pim route	This command was introduced.	4.2(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
clear ipv6 routing multicast event-history	This command was introduced.	4.2(1)
ip igmp enforce-router-alert	This command was introduced.	4.2(1)
ip igmp event-history	This command was introduced.	4.2(1)
ip igmp join-group	Added the keyword **route-map** and argument *policy-name*	4.2(1)
ip igmp snooping event-history	This command was introduced.	4.2(1)
ip igmp snooping group-timeout	This command was introduced.	4.2(1)
ip igmp snooping group-timeout (VLAN)	This command was introduced.	4.2(1)
ip igmp snooping link-local-groups-suppression	This command was introduced.	4.2(1)
ip igmp snooping optimise-multicast-flood	This command was introduced.	4.2(1)
ip igmp snooping proxy	This command was introduced.	4.2(1)
ip igmp snooping proxy (VLAN)	This command was introduced.	4.2(1)
ip igmp snooping querier	This command was introduced.	4.2(1)
ip msdp event-history	This command was introduced.	4.2(1)
ip pim event-history	This command was introduced.	4.2(1)
ip pim spt-threshold infinity	This command was introduced.	4.2(1)
ip pim ssm range	This command was introduced.	4.2(1)
ip pim state-limit	This command was introduced.	4.2(1)
ip pim use-shared-tree-only	The keyword **group-list** was added and a route-map policy name was used to define groups	4.2(1)
ip routing multicast event-history	This command was introduced.	4.2(1)
ipv6 pim event-history	This command was introduced.	4.2(1)
ipv6 pim ssm range	The keyword **none** was added	4.2(1)
ipv6 pim use-shared-tree-only	Keyword **group-list** was added and a route-map policy name is used to define groups	4.2(1)
ipv6 routing multicast event-history	This command was introduced.	4.2(1)
ipv6 routing multicast holddown	This command was introduced.	4.2(1)
show ip igmp snooping event-history	This command was introduced.	4.2(1)
ip pim jp-policy	The optional **in** and **out** parameters were added.	4.2(3)
ip pim pre-build-spt	This command was introduced.	4.2(3)
ip routing multicast software-replicate	This command was introduced.	4.2(3)
ipv6 pim jp-policy	The optional **in** and **out** parameters were added.	4.2(3)
ipv6 routing multicast software-replicate	This command was introduced.	4.2(3)

Table 1 New and Changed Features

Feature	Description	Changed in Release
ip igmp event-history	Replaced the buffer type keywords **debug** and **event** with keywords **group-debugs**, **group-events**, **interface-debugs**, and **interface-events**.	4.1(3)
ip igmp immediate-leave	This command was introduced.	4.1(3)
ip msdp event-history	Changed the buffer type arguments to required.	4.1(3)
ipv6 mld immediate-leave	This command was introduced.	4.1(3)
show forwarding ipv6 multicast route	Added the *group-addr* and *source-addr* arguments.	4.1(3)
show ip igmp interface	Changed output to include vPC information when IGMP is in vPC mode.	4.1(3)
show ip igmp snooping mrouter	Changed output to include vPC information.	4.1(3)
show ip igmp snooping statistics	Changed output to include vPC information.	4.1(3)
show ip pim statistics	Changed output to include vPC information when PIM is in vPC mode.	4.1(3)
clear ip igmp interface statistics	This command was introduced.	4.0(3)
clear ip igmp snooping statistics vlan	Added the keyword **all**.	4.0(3)
clear ip mroute	This command was introduced.	4.0(3)
clear ip msdp route	This command was introduced.	4.0(3)
clear ip msdp sa-cache	This command was removed.	4.0(3)
clear ip pim interface statistics	The interface argument was made optional.	4.0(3)
clear ipv6 mroute	This command was introduced.	4.0(3)
clear ipv6 pim interface statistics	This command was introduced.	4.0(3)
clear routing ipv6 multicast	This command was introduced.	4.0(3)
clear routing multicast	This command was introduced.	4.0(3)
clear ip msdp route	This command was removed.	4.0(3)
ip igmp snooping report-suppression	Global configuration mode was added.	4.0(3)
ip igmp snooping v3-report-suppression (Global)	This command was introduced.	4.0(3)
ip igmp snooping v3-report-suppression (VLAN)	This command was introduced.	4.0(3)
ip msdp peer	The remote AS number was made an optional argument.	4.0(3)
ip pim register-rate-limit	This command was introduced.	4.0(3)
ipv6 pim register-rate-limit	This command was introduced.	4.0(3)
show ip netstack mroute	This command was introduced.	4.0(3)
ip pim bidir-rp-limit	This command was introduced.	4.0(2)
ipv6 pim bidir-rp-limit	This command was introduced.	4.0(2)
clear ip igmp snooping statistics vlan	This command was introduced.	4.0(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
clear ip msdp peer	This command was introduced.	4.0(1)
clear ip msdp policy statistics sa-policy	This command was introduced.	4.0(1)
clear ip msdp route	This command was introduced.	4.0(1)
clear ip msdp sa-cache	This command was introduced.	4.0(1)
clear ip msdp statistics	This command was introduced.	4.0(1)
clear ip pim interface statistics	This command was introduced.	4.0(1)
clear ip pim policy statistics	This command was introduced.	4.0(1)
clear ip pim statistics	This command was introduced.	4.0(1)
clear ipv6 pim interface statistics	This command was introduced.	4.0(1)
clear ipv6 pim policy statistics	This command was introduced.	4.0(1)
clear ipv6 pim statistics	This command was introduced.	4.0(1)
feature msdp	This command was introduced.	4.0(1)
feature pim	This command was introduced.	4.0(1)
feature pim6	This command was introduced.	4.0(1)
ip igmp access-group	This command was introduced.	4.0(1)
ip igmp flush-routes	This command was introduced.	4.0(1)
ip igmp group-timeout	This command was introduced.	4.0(1)
ip igmp join-group	This command was introduced.	4.0(1)
ip igmp last-member-query-count	This command was introduced.	4.0(1)
ip igmp last-member-query-response-time	This command was introduced.	4.0(1)
ip igmp query-interval	This command was introduced.	4.0(1)
ip igmp query-max-response-time	This command was introduced.	4.0(1)
ip igmp query-timeout	This command was introduced.	4.0(1)
ip igmp report-link-local-groups	This command was introduced.	4.0(1)
ip igmp report-policy	This command was introduced.	4.0(1)
ip igmp robustness-variable	This command was introduced.	4.0(1)
ip igmp snooping (Global)	This command was introduced.	4.0(1)
ip igmp snooping (VLAN)	This command was introduced.	4.0(1)
ip igmp snooping explicit-tracking	This command was introduced.	4.0(1)
ip igmp snooping fast-leave	This command was introduced.	4.0(1)
ip igmp snooping last-member-query-interval	This command was introduced.	4.0(1)
ip igmp snooping mrouter interface	This command was introduced.	4.0(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
ip igmp snooping optimised-multicast-flood	This command was introduced.	4.0(1)
ip igmp snooping report-suppression	This command was introduced.	4.0(1)
ip igmp snooping static-group	This command was introduced.	4.0(1)
ip igmp startup-query-count	This command was introduced.	4.0(1)
ip igmp startup-query-interval	This command was introduced.	4.0(1)
ip igmp state-limit	This command was introduced.	4.0(1)
ip igmp static-oif	This command was introduced.	4.0(1)
ip igmp version	This command was introduced.	4.0(1)
ip mroute	This command was introduced.	4.0(1)
ip msdp description	This command was introduced.	4.0(1)
ip msdp flush-routes	This command was introduced.	4.0(1)
ip msdp group-limit	This command was introduced.	4.0(1)
ip msdp keepalive	This command was introduced.	4.0(1)
ip msdp mesh-group	This command was introduced.	4.0(1)
ip msdp originator-id	This command was introduced.	4.0(1)
ip msdp password	This command was introduced.	4.0(1)
ip msdp peer	This command was introduced.	4.0(1)
ip msdp reconnect-interval	This command was introduced.	4.0(1)
ip msdp sa-interval	This command was introduced.	4.0(1)
ip msdp sa-limit	This command was introduced.	4.0(1)
ip msdp sa-policy in	This command was introduced.	4.0(1)
ip msdp sa-policy out	This command was introduced.	4.0(1)
ip msdp shutdown	This command was introduced.	4.0(1)
ip pim anycast-rp	This command was introduced.	4.0(1)
ip pim auto-rp listen	This command was introduced.	4.0(1)
ip pim auto-rp mapping-agent	This command was introduced.	4.0(1)
ip pim auto-rp mapping-agent-policy	This command was introduced.	4.0(1)
ip pim auto-rp rp-candidate	This command was introduced.	4.0(1)
ip pim auto-rp rp-candidate-policy	This command was introduced.	4.0(1)
ip pim border	This command was introduced.	4.0(1)
ip pim bsr bsr-policy	This command was introduced.	4.0(1)
ip pim bsr-candidate	This command was introduced.	4.0(1)
ip pim bsr forward	This command was introduced.	4.0(1)
ip pim bsr listen	This command was introduced.	4.0(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
ip pim bsr rp-candidate-policy	This command was introduced.	4.0(1)
ip pim dr-priority	This command was introduced.	4.0(1)
ip pim flush-routes	This command was introduced.	4.0(1)
ip pim hello-authentication ah-md5	This command was introduced.	4.0(1)
ip pim hello-interval	This command was introduced.	4.0(1)
ip pim jp-policy	This command was introduced.	4.0(1)
ip pim log-neighbor-changes	This command was introduced.	4.0(1)
ip pim neighbor-policy	This command was introduced.	4.0(1)
ip pim register-policy	This command was introduced.	4.0(1)
ip pim rp-address	This command was introduced.	4.0(1)
ip pim rp-candidate	This command was introduced.	4.0(1)
ip pim send-rp-announce	This command was introduced.	4.0(1)
ip pim send-rp-discovery	This command was introduced.	4.0(1)
ip pim sparse-mode	This command was introduced.	4.0(1)
ip pim spt-threshold infinity	This command was introduced.	4.0(1)
ip pim ssm policy	This command was introduced.	4.0(1)
ip pim ssm range	This command was introduced.	4.0(1)
ip pim use-shared-tree-only	This command was introduced.	4.0(1)
ipv6 mld access-group	This command was introduced.	4.0(1)
ipv6 mld group-timeout	This command was introduced.	4.0(1)
ipv6 mld join-group	This command was introduced.	4.0(1)
ipv6 mld last-member-query-count	This command was introduced.	4.0(1)
ipv6 mld last-member-query-response-time	This command was introduced.	4.0(1)
ipv6 mld querier-timeout	This command was introduced.	4.0(1)
ipv6 mld query-interval	This command was introduced.	4.0(1)
ipv6 mld query-max-response-time	This command was introduced.	4.0(1)
ipv6 mld query-timeout	This command was introduced.	4.0(1)
ipv6 mld report-link-local-groups	This command was introduced.	4.0(1)
ipv6 mld report-policy	This command was introduced.	4.0(1)
ipv6 mld robustness-variable	This command was introduced.	4.0(1)
ipv6 mld ssm-translate	This command was introduced.	4.0(1)
ipv6 mld startup-query-count	This command was introduced.	4.0(1)
ipv6 mld startup-query-interval	This command was introduced.	4.0(1)
ipv6 mld state-limit	This command was introduced.	4.0(1)

Table 1 New and Changed Features

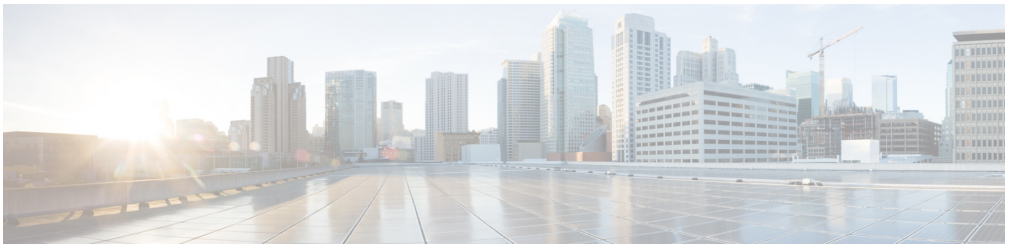
Feature	Description	Changed in Release
ipv6 mld static-oif	This command was introduced.	4.0(1)
ipv6 pim anycast-rp	This command was introduced.	4.0(1)
ipv6 pim border	This command was introduced.	4.0(1)
ipv6 pim bsr bsr-policy	This command was introduced.	4.0(1)
ipv6 pim bsr-candidate	This command was introduced.	4.0(1)
ipv6 pim bsr forward	This command was introduced.	4.0(1)
ipv6 pim bsr listen	This command was introduced.	4.0(1)
ipv6 pim bsr rp-candidate-policy	This command was introduced.	4.0(1)
ipv6 pim dr-priority	This command was introduced.	4.0(1)
ipv6 pim hello-interval	This command was introduced.	4.0(1)
ipv6 pim jp-policy	This command was introduced.	4.0(1)
ipv6 pim log-neighbor-changes	This command was introduced.	4.0(1)
ipv6 pim neighbor-policy	This command was introduced.	4.0(1)
ipv6 pim rp-candidate	This command was introduced.	4.0(1)
ipv6 pim sparse-mode	This command was introduced.	4.0(1)
ipv6 pim ssm range	This command was introduced.	4.0(1)
ipv6 pim state-limit	This command was introduced.	4.0(1)
ipv6 pim use-shared-tree-only	This command was introduced.	4.0(1)
restart igmp	This command was introduced.	4.0(1)
restart msdp	This command was introduced.	4.0(1)
restart pim	This command was introduced.	4.0(1)
restart pim6	This command was introduced.	4.0(1)
show forwarding distribution ip igmp snooping	This command was introduced.	4.0(1)
show forwarding distribution ipv6 multicast route	This command was introduced.	4.0(1)
show forwarding distribution multicast	This command was introduced.	4.0(1)
show forwarding distribution multicast client	This command was introduced.	4.0(1)
show forwarding distribution multicast outgoing-interface-list	This command was introduced.	4.0(1)
show forwarding ipv6 multicast route	This command was introduced.	4.0(1)
show forwarding multicast outgoing-interface-list	This command was introduced.	4.0(1)
show forwarding multicast route	This command was introduced.	4.0(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
show ip igmp groups	This command was introduced.	4.0(1)
show ip igmp interface	This command was introduced.	4.0(1)
show ip igmp local-groups	This command was introduced.	4.0(1)
show ip igmp route	This command was introduced.	4.0(1)
show ip igmp snooping	This command was introduced.	4.0(1)
show ip igmp snooping explicit-tracking	This command was introduced.	4.0(1)
show ip igmp snooping groups	This command was introduced.	4.0(1)
show ip igmp snooping mrouter	This command was introduced.	4.0(1)
show ip igmp snooping querier	This command was introduced.	4.0(1)
show ip igmp snooping statistics	This command was introduced.	4.0(1)
show ip mroute	This command was introduced.	4.0(1)
show ip mroute summary	This command was introduced.	4.0(1)
show ip msdp count	This command was introduced.	4.0(1)
show ip msdp mesh-group	This command was introduced.	4.0(1)
show ip msdp peer	This command was introduced.	4.0(1)
show ip msdp policy statistics sa-policy	This command was introduced.	4.0(1)
show ip msdp route	This command was introduced.	4.0(1)
show ip msdp rpf	This command was introduced.	4.0(1)
show ip msdp sa-cache	This command was introduced.	4.0(1)
show ip msdp sources	This command was introduced.	4.0(1)
show ip msdp summary	This command was introduced.	4.0(1)
show ip pim oif-list	This command was introduced.	4.0(1)
show ip pim neighbor	This command was introduced.	4.0(1)
show ip pim interface	This command was introduced.	4.0(1)
show ip pim policy statistics auto-rp	This command was introduced.	4.0(1)
show ip pim policy statistics bsr	This command was introduced.	4.0(1)
show ip pim policy statistics jp-policy	This command was introduced.	4.0(1)
show ip pim policy statistics neighbor-policy	This command was introduced.	4.0(1)
show ip pim policy statistics register-policy	This command was introduced.	4.0(1)
show ip pim route	This command was introduced.	4.0(1)
show ip pim rp	This command was introduced.	4.0(1)
show ip pim rp-hash	This command was introduced.	4.0(1)

Table 1 New and Changed Features

Feature	Description	Changed in Release
show ip pim statistics	This command was introduced.	4.0(1)
show ipv6 mld groups	This command was introduced.	4.0(1)
show ipv6 mld local-groups	This command was introduced.	4.0(1)
show ipv6 mroute	This command was introduced.	4.0(1)
show ipv6 mroute summary	This command was introduced.	4.0(1)
show ipv6 pim df	This command was introduced.	4.0(1)
show ipv6 pim group-range	This command was introduced.	4.0(1)
show ipv6 pim interface	This command was introduced.	4.0(1)
show ipv6 pim neighbor	This command was introduced.	4.0(1)
show ipv6 pim oif-list	This command was introduced.	4.0(1)
show ipv6 pim policy statistics jp-policy	This command was introduced.	4.0(1)
show ipv6 pim policy statistics neighbor-policy	This command was introduced.	4.0(1)
show ipv6 pim route	This command was introduced.	4.0(1)
show ipv6 pim rp	This command was introduced.	4.0(1)
show ipv6 pim rp-hash	This command was introduced.	4.0(1)
show ipv6 pim statistics	This command was introduced.	4.0(1)
show routing ipv6 multicast	This command was introduced.	4.0(1)
show routing ipv6 multicast clients	This command was introduced.	4.0(1)
show routing multicast	This command was introduced.	4.0(1)
show routing multicast clients	This command was introduced.	4.0(1)
show running-config msdp	This command was introduced.	4.0(1)
show running-config pim	This command was introduced.	4.0(1)
show running-config pim6	This command was introduced.	4.0(1)



C Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with C.

clear ip igmp event-history

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

clear ip igmp event-history {**cli** | **debugs** | **errors** | **events** | **ha** | **igmp-internal** | **msgs** | **mtrace** | **policy** | **statistics** | **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 HA event history buffer.
igmp-internal	Clears the IGMP internal event history buffer.
msgs	Clears the messages event history buffer.
mtrace	Clears the mtrace event history buffer.
policy	Clears the policy event history buffer.
statistics	Clears the statistics event history buffer.
vrf	Clears the VRF event history buffer.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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 [*if-type if-number*]

Syntax Description

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	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-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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 {**vpc** | **igmp-snoop-internal** | **mfdm** | **mfdm-sum** | **vlan** | **vlan-events**}

Syntax Description

vpc	Clears the virtual port channel (vPC) event history buffer.
igmp-snoop-internal	Clears the IGMP snooping internal event history buffer.
mfdm	Clears the multicast FIB distribution (MFDM) event history buffer.
mfdm-sum	Clears the MFDM sum event history buffer.
vlan	Clears the VLAN event history buffer.
vlan-events	Clears the VLAN-events event history buffer.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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 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	VLAN number. The range is from 1 to 3967 and 4048 to 4093.
all	Applies to all VLANs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	The **all** keyword was added.

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 mroute

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

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

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Displays information for all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

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

This command does not require a license.

Examples

This example shows how to clear the multicast routing table:

```
switch(config)# clear ip mroute *
switch(config)#
```

Related Commands

Command	Description
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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a 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*]

Syntax Description

peer-address	IP address of MSDP peer.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance name.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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*]

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 name.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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 matching 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*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	(Optional) All sources for group from the SA-cache.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Applies to all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	This command was removed.

Usage Guidelines

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

This command requires the Enterprise Services license.

Note Effective with Cisco NX-OS Release 4.0(3), the **clear ip msdp route** command is not available in Cisco NX-OS software.

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 matching 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*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	(Optional) All sources for group from the SA-cache.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Applies to all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	This command was removed.

Usage Guidelines

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

This command requires the Enterprise Services license.

Note Effective with Cisco NX-OS Release 4.0(3), the **clear ip msdp route** command is not available in Cisco NX-OS software.

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*]

Syntax Description

peer-address	(Optional) IP address of the MSDP peer.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance name.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a 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 [*if-type if-number*]

Syntax Description

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	The interface argument was made optional.

Usage Guidelines

This command requires the Enterprise 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**} *if-type if-number*

clear ip pim policy statistics {**register-policy** | **bsr** {**bsr-policy** | **rp-candidate-policy**} | **auto-rp** {**rp-candidate-policy** | **mapping-agent-policy**}} [**vrf** {*vrf-name* | **all**}]

Syntax Description

jp-policy	Specifies statistics for the join-prune policy.
neighbor-policy	Specifies statistics for the neighbor policy.
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.
register-policy	Specifies statistics for the register policy.
bsr	Specifies the bootstrap protocol RP-distribution policy.
bsr-policy	Specifies the statistics for BSR messages.
rp-candidate-policy	Specifies the statistics for RP candidate messages.
auto-rp	Specifies the statistics for Auto-RP messages.
mapping-agent-policy	Specifies the statistics for mapping agent messages.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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 for IPv4 (PIM), use the **clear ip pim route** command.

clear ip pim route {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to clear 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**}]

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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** | **mfdm-stats** | **rib** | **vrf**}

Syntax Description

cli	Clears the CLI event history buffer.
mfdm	Clears the multicast FIB distribution (MFDM) event 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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 ipv6 mld groups

To clear Multicast Listener Discovery (MLD) related information in the IPv6 multicast routing table, use the **clear ipv6 mld groups** command.

clear ipv6 [**icmp**] **mld groups** {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

icmp	(Optional) clears ICMP information.
*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

The **clear ipv6 mld 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 MLD-related routes in the IPv6 multicast routing table:

```
switch(config)# clear ipv6 mld groups *
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about the IPv6 multicast routing table.

clear ipv6 mld route

To clear Multicast Listener Discovery MLD-related information in the IPv6 multicast routing table, use the **clear ipv6 mld route** command.

clear ipv6 [**icmp**] **mld route** {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

icmp	(Optional) Clears ICMPv6 information.
*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

The **clear ipv6 mld 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 MLD-related routes in the IPv6 multicast routing table:

```
switch(config)# clear ipv6 mld route *
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about the IPv6 multicast routing table.

clear ipv6 mroute

To clear routes in the IPv6 multicast routing table, use the **clear ipv6 mroute** command.

clear ipv6 mroute {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear all the routes in the IPv6 multicast routing table:

```
switch(config)# clear ipv6 mroute *
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about the IPv6 multicast routing table.

clear ipv6 pim event-history

To clear information in the IPv6 Protocol Independent Multicast (PIM6) event history buffers, use the **clear ipv6 pim event-history** command.

clear ipv6 pim event-history

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear information in the PIM6 event history buffers:

```
switch(config)# clear ipv6 pim event-history
switch(config)#
```

Related Commands

Command	Description
ipv6 pim event-history	Configures the size of the PIM6 event history buffers.
show ipv6 pim event-history	Displays information in the PIM6 event history buffers.

clear ipv6 pim interface statistics

To clear Protocol Independent Multicast for IPv6 (PIM6) counters for a specified interface, use the **clear ipv6 pim interface statistics** command.

clear ipv6 pim interface statistics [*if-type if-number*]

Syntax Description

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	The interface argument was made optional.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to clear PIM6 counters for a specified interface:

```
switch# clear ipv6 pim interface statistics ethernet 2/2
switch#
```

Related Commands

Command	Description
show ipv6 pim statistics	Displays PIM6 statistics.

clear ipv6 pim policy statistics

To clear Protocol Independent Multicast for IPv6 (PIM6) policy counters, use the **clear ipv6 pim policy statistics** command.

clear ipv6 pim policy statistics {**jp-policy** | **neighbor-policy**} *if-type if-number*

Syntax Description

jp-policy	Specifies the statistics for join-prune policy.
neighbor-policy	Specifies the statistics for neighbor policy.
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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to clear PIM6 join-prune policy counters:

```
switch(config)# clear ipv6 pim policy statistics jp-policy
```

Related Commands

Command	Description
show ipv6 pim policy statistics	Displays PIM6 policy statistics.

clear ipv6 pim route

To clear routes specific to Protocol Independent Multicast for IPv6 (PIM6), use the **clear ipv6 pim route** command.

clear ipv6 pim route {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to clear all the routes specific to PIM6:

```
switch(config)# clear ipv6 pim route *
switch(config)#
```

Related Commands

Command	Description
show ipv6 pim route	Displays information about PIM6 specific routes.

clear ipv6 pim statistics

To clear Protocol Independent Multicast for IPv6 (PIM6) statistics counters, use the **clear ipv6 pim statistics** command.

clear ipv6 pim statistics [**vrf** {*vrf-name* | **all**}]

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to clear PIM6 statistics counters:

```
switch# clear ipv6 pim statistics
```

Related Commands

Command	Description
show ipv6 pim statistics	Displays PIM6 statistics.

clear ipv6 routing multicast event-history

To clear information in the IPv6 Multicast Routing Information Base (M6RIB) event history buffers, use the **clear ipv6 routing multicast event-history** command.

clear ipv6 routing multicast event-history {**cli** | **mfdm** | **mfdm-stats** | **rib** | **vrf**}

Syntax Description

cli	Clears the CLI event history buffer.
mfdm	Clears the multicast FIB distribution (MFDM) event 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear information in the M6RIB RIB event history buffer:

```
switch(config)# clear ipv6 routing multicast event-history rib
switch(config)#
```

Related Commands

Command	Description
ipv6 routing multicast event-history	Configures the size of the IPv6 M6RIB event history buffers.
show routing ipv6 multicast event-history	Displays information in the IPv6 M6RIB event history buffers.

clear routing ipv6 multicast

To clear the IPv6 multicast routing table, use the **clear routing ipv6 multicast** command.

clear routing ipv6 multicast {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

*****	Specifies routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear the IPv6 multicast routing table:

```
switch(config)# clear routing ipv6 multicast *
switch(config)#
```

Related Commands

Command	Description
show routing ipv6 multicast	Displays information about IPv6 multicast routes.

clear routing multicast

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

clear routing [**ip** | **ipv4**] **multicast** {***** | *group-prefix* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

ip	(Optional) Clears IP commands.
ipv4	(Optional) Clears IPv4 commands.
*****	Specifies all routes.
group-prefix	Group prefix.
group	Group address.
source	(Optional) Source (S, G) route.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	(Optional) VRF name. The name can be alphanumeric, case sensitive, or a maximum of 32 characters.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	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.

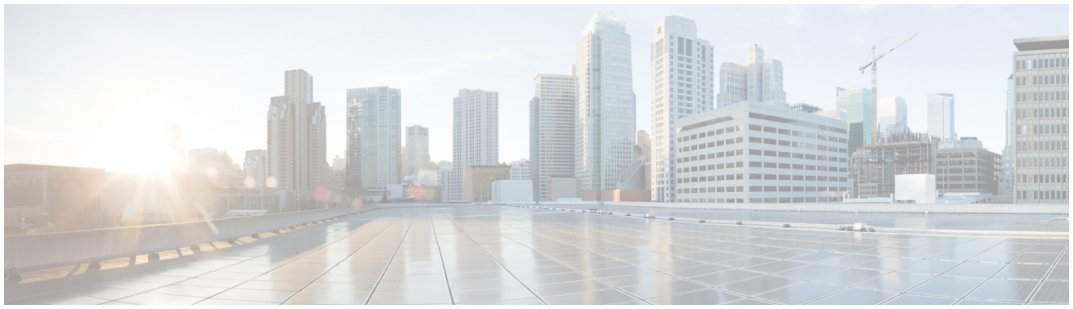
Examples

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.



F Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with F.

feature msdp

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

feature msdp

no feature msdp

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services License.

Examples

This example shows how to enable the MSDP feature:

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

Related Commands

Command	Description
show ip pim vrf	Displays the per VRF information.

feature pim

To enable the Protocol Independent Multicast (PIM) feature, use the **feature pim** command. To disable this feature, use the **no** form of this command.

feature pim

no feature pim

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services License.

Examples

This example shows how to enable the PIM:

```
switch(config)# feature pim
switch(config)#
```

Related Commands

Command	Description
show ip pim route	Displays the PIM route specific information.

feature pim6

To enable the Protocol Independent Multicast (PIM) for IPv6 feature, use the **feature pim6** command. To disable this feature, use the **no** form of this command.

feature pim6

no feature pim6

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services License.

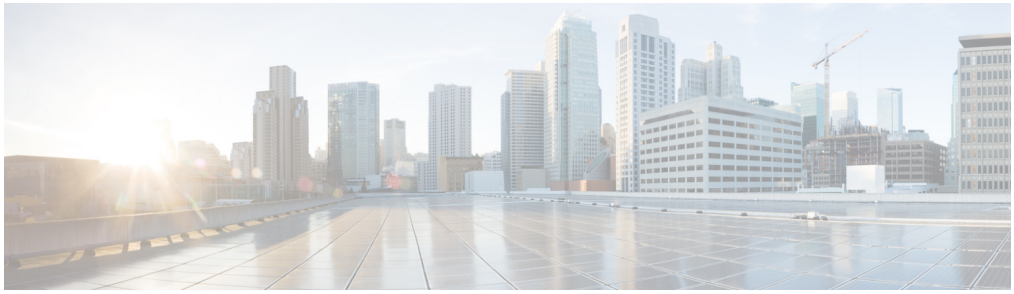
Examples

The example shows how to enable the PIM for IPv6:

```
switch(config)# feature pim6
switch(config)#
```

Related Commands

Command	Description
show ip msdp summary	Displays the summary of MSDP peers.



H Commands

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

hardware fabric flow-control multicast

To enable the Cisco Nexus 7000 Series switch to handle multicast traffic more efficiently in microbursting environments, use the **hardware fabric flow-control multicast** command. To disable this feature, use the **no** form of this command.

hardware fabric flow-control multicast [**all-modules** | **forced** | **module** *module-number*]

no sampler hardware fabric flow-control multicast [**all-modules** | **forced** | **module** *module-number*]

Syntax Description

all-modules	(Optional) Specifies the fabric flow-control on all modules.
forced	(Optional) Specifies the fabric flow-control mandatorily.
module	(Optional) Specifies the fabric flow-control to individual module(s).
module-number	Specifies module number. The range is from 1 to 18.

Defaults

None.

Command Modes

Global configuration

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

None.

This command does not require a license.

Examples

This example shows how to configure fabric flow control on all modules:

```
switch(config)# hardware fabric flow-control multicast all-modules forced
switch(config)#
```

Related Commands

Command	Description
show system internal xbar fabric-flow-control-info	Displays the hardware information.

hardware forwarding shim

To enable the hardware forwarding shim header knob, use the **hardware forwarding shim** command. To disable this feature, use the **no** form of this command.

hardware forwarding shim

no hardware forwarding shim

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
6.2(2)	This command was introduced.

Usage Guidelines

None.

This command does not require a license.

Examples

This example shows how to enable the hardware forwarding shim:

```
switch# config t
switch(config)# hardware forwarding shim
Disabling shim knob on vdc 1
switch(config)#
```

Related Commands

Command	Description
show system internal xbar fabric-flow-control-info	Displays the hardware information.

hardware proxy layer-3 replication rebalance-mode

To configure the hardware proxy Layer 3 multicast balance mode for replication, use the **hardware proxy layer-3 replication rebalance-mode** command. To disable this feature, use the **no** form of this command.

hardware proxy layer-3 replication rebalance-mode {**auto | manual**}

no hardware proxy layer-3 replication rebalance-mode {**auto | manual**}

Syntax Description

auto	Specifies to automatically rebalance VLAN interfaces on available replicators.
manual	Specifies to manually rebalance VLAN interfaces on available replicators using the command-line interface (CLI).

Defaults

Manual

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command applies only to the Cisco Nexus 7000 Series chassis that contains an F1 Series module or an M1 Series module. This command applies when you are using either a FabricPath or Ethernet interface.

Note The system automatically balances all Layer 3 routing traffic among the available proxy routing interfaces on the M Series modules in the chassis.

This command does not require a license.

Examples

This example shows how to automatically rebalance VLAN interfaces on available replicators:

```
switch(config)# hardware proxy layer-3 replication rebalance-mode auto
switch(config)#
```

This example shows how to manually rebalance VLAN interfaces on available replicators using the CLI:

```
switch(config)# hardware proxy layer-3 replication rebalance-mode manual
switch(config)#
```

Related Commands

Command	Description
show hardware proxy layer-3 detail	Displays detailed information on the proxy Layer 3 functionality.

hardware proxy layer-3 replication

To configure specific modules and physical interfaces on the N7K-M Series module to provide the proxy routing for egress replication of Layer 3 multicast packets on the N7K-F Series module, use the **hardware proxy layer-3 replication** command. To delete the user configuration and to use all M-series modules in the virtual device context (VDC) for egress replication, use the **no** form of this command.

hardware proxy layer-3 replication {**exclude** | **use**} {**interface ethernet** *slot/port* | **module** *slot-number*} [**module-type f1**]

no hardware proxy layer-3 replication

Syntax Description

exclude	Specifies all available members.
use	Specifies members.
interface	Specifies interfaces.
ethernet	Specifies the ethernet interface.
slot/port	Slot or port number. The range is from 1 to 253.
module	Specifies modules.
slot-number	Slot number. The range is from 1 to 18.
module-type f1	(Optional) Specifies the type of modules to perform proxy Layer 3 replication.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command applies only to the Cisco Nexus 7000 Series chassis that contains an F1 Series module or an M1 Series module. This command applies when you are using either a FabricPath or Ethernet interface.

This command does not require a license.

Examples

The example shows how to configure a service group timeout in seconds:

```
switch(config)# hardware proxy layer-3 replication exclude interface ethernet 2/1-16,
ethernet 3/1, ethernet 4/1-2
switch(config)#
```

Related Commands

Command	Description
show hardware proxy layer-3 detail	Displays detailed information on the proxy Layer 3 functionality.

hardware proxy layer-3 replication trigger rebalance

To trigger one-time load balancing among all the proxy routing multicast replication interfaces, use the **hardware proxy layer-3 replication trigger rebalance** command.

hardware proxy layer-3 replication trigger rebalance

Syntax Description

This command has no arguments or keywords.

Defaults

Manual

Command Modes

EXEC mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command applies only to the Cisco Nexus 7000 Series chassis that contains an F1 Series module or an M1 Series module. This command applies when you are using either a FabricPath or Ethernet interface.

This command does not require a license.

Examples

This example shows how to configure load balancing among the proxy routing replication interfaces:

```
switch# hardware proxy layer-3 replication trigger rebalance
switch#
```

Related Commands

Command	Description
show hardware proxy layer-3 detail	Displays detailed information on the proxy Layer 3 functionality.

I Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with I.

ip igmp access-group

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

ip igmp access-group *policy-name*

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

Syntax Description

policy-name	Route-map policy name.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **ip igmp access-group** command is an alias of the **ip igmp report-policy** command.

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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

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.

Defaults

Enabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# ip igmp enforce-router-alert
```

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

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

Related Commands

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** | **errors** | **group-debugs** | **group-events** | **ha** | **igmp-internal** | **interface-debugs** | **interface-events** | **msgs** | **mtrace** | **policy** | **statistics** | **vrf**} **size** *buffer-size*

no ip igmp event-history {**clis** | **errors** | **group-debugs** | **group-events** | **ha** | **igmp-internal** | **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.
igmp-internal	Configures the IGMP IGMP-internal 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**.

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.
4.1(3)	Replaced the buffer type keywords **debug** and **event** with keywords **group-debugs**, **group-events**, **interface-debugs**, and **interface-events**.

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.

Defaults

The routes are not flushed.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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
```

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

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

Related Commands

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

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.

Defaults

The group membership timeout is 260 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a group membership timeout:

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

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

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

Related Commands

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.

Defaults

The immediate leave feature is disabled.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(3)	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.

Examples

This example shows how to enable the immediate leave feature:

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

This example shows how to disable the immediate leave feature:

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

Related Commands

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.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

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.

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

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.

Beginning with Cisco NX-OS Release 5.2, if **ip igmp join-group** is configured under any interface, other interfaces will be removed from the outgoing interface list (OIL) resulting in multicast packet loss. The command **ip igmp join-group** must be only used for testing and must not be present on a production device. Use the **ip igmp static-oif** command instead.

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

This command does not require a license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp join-group 230.0.0.0
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 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 static-oif	Statically binds a multicast group to the OIF.

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.

Defaults

The query count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a query count:

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

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

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

Related Commands

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.

Defaults

The query interval is 1 second.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a query interval:

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

Defaults

The query interval is 125 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a query interval:

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

Defaults

The query maximum response time is 10 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

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

Defaults

The query timeout is 255 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a query timeout:

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

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

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

Related Commands

Command	Description
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.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp report-link-local-groups
switch(config-if)#
```

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

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

Related Commands

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 policy name is case sensitive alphanumeric, maximum size is 32 characters.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

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

The **ip igmp report-policy** command is an alias of the **ip igmp access-group** command.

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

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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.

Defaults

The robustness count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a robustness count:

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

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

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

Related Commands

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

ip igmp snooping (Global)

To enable IGMP snooping for the current virtual device context (VDC), use the **ip igmp snooping** command. To disable IGMP snooping for the current VDC, use the **no** form of this command.

ip igmp snooping

no ip igmp snooping

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

If the global configuration of IGMP snooping is disabled, 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 for the current VDC:

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

This example shows how to disable IGMP snooping for the current VDC:

```
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.

Defaults

Enabled

Command Modes

VLAN configuration (config-vlan) mode (until Cisco NX-OS Release 5.1)

Configure VLAN (config-vlan-config) mode (Since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

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

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

This command does not require a license.

Examples

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping
switch(config-vlan-config)# ]
```

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

```
switch(config)# vlan configuration 10
switch(config-vlan)# no ip igmp snooping
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping event-history

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

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

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

Syntax Description

vpc	Clears the virtual port channel (vPC) event history buffer.
igmp-snoop-internal	Clears the IGMP snooping internal event history buffer.
mfdm	Clears the Multicast Forwarding Distribution Module (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-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**.

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

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.

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.

Defaults

Enabled

Command Modes

VLAN configuration (config-vlan) (until Cisco NX-OS Release 5.1)

Configure VLAN (config-vlan-config) mode (Since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher).

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping explicit-tracking
switch(config-vlan-config)#
```

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# no ip igmp snooping explicit-tracking
switch(config-vlan-config)#
```

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.

Defaults

Disabled

Command Modes

VLAN configuration (config-vlan) mode (until Cisco NX-OS Release 5.1)

Configure VLAN (config-vlan-config) mode (Since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher).

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	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.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

This command does not require a license.

Examples

This example shows how to enable support of IGMPv2 hosts:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping fast-leave
switch(config-vlan-config)#
```

This example shows how to disable support of IGMPv2 hosts:

```
switch(config)# vlan configuration 10
```

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

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping group-timeout

To configure group membership timeout in all VLANs, use the **ip igmp snooping group-timeout** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping group-timeout *timeout* | **never**

no ip igmp snooping group-timeout *timeout*

Syntax Description

timeout	Timeout in minutes. The range is from 1 to 10080.
never	Never expire ports from group membership.

Defaults

None

Command Modes

Global Configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure group membership timeout in all VLANs:

```
switch(config)# ip igmp snooping group-timeout 100
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping group-timeout (VLAN)

To configure group membership timeout in all VLANs, use the **ip igmp snooping group-timeout** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping group-timeout *timeout* | **never**

no ip igmp snooping group-timeout *timeout*

Syntax Description

timeout	Timeout in minutes. The range is from 1 to 10080.
never	Never expire ports from group membership.

Defaults

None

Command Modes

VLAN configuration (config-vlan) mode (until Cisco NX-OS Release 5.1)

Configure VLAN (config-vlan-config) mode (Since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher).

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.1(2)	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.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

This command does not require a license.

Examples

This example shows how to configure group membership timeout in all VLANs:

```
switch(config)# ip igmp snooping group-timeout 100
switch(config)#
```

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.

Defaults

The query interval is 1.

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping last-member-query-interval 3
switch(config-vlan-config)#
```

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# no ip igmp snooping last-member-query-interval
switch(config-vlan-config)#
```

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.

Defaults

Enabled

Command Modes

Global configuration (config)

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

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

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping link-local-groups-suppression
switch(config-vlan-config)#
```

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# no ip igmp snooping link-local-groups-suppression
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping max-gq-miss

To configure the maximum number of general query misses permitted for IGMP snooping, use the **ip igmp snooping max-gq-miss** command. To remove the default settings, use the **no** form of this command.

ip igmp snooping max-gq-miss ***count***

no ip igmp snooping max-gq-miss *count*

Syntax Description

count	Specifies the IGMP snooping count. The range is from 3 to 5 queries. The default is 3 queries.

Defaults

3

Command Modes

Global configuration mode.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
6.2(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the maximum number of general query misses permitted for IGMP snooping:

```
switch(config)# config t
switch(config)# ip igmp snooping max-gq-miss 5
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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 *if-type if-number*

no ip igmp snooping mrouter interface *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.

Defaults

None

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

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

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping mrouter interface ethernet 2/1
switch(config-vlan-config)#
```

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

```
switch(config)# vlan configuration 10
```

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

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping optimised-multicast-flood

To configure Optimized Multicast Flood (OMF) on the VLAN, use the **ip igmp snooping optimised-multicast flood** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping optimised-multicast-flood

no ip igmp snooping optimised-multicast-flood

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

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

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

This example shows how to configure OMF on the VLAN:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping optimised-multicast-flood
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping proxy

To configure IGMP snooping proxy, use the **ip igmp snooping proxy** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping proxy general-queries

no ip igmp snooping proxy general-queries

Syntax Description

general-queries	Specifies proxy for general queries.

Defaults

None

Command Modes

Global Configuration mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure proxy for general queries:

```
switch(config)# ip igmp snooping proxy general-queries
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping proxy (VLAN)

To configure IGMP snooping proxy, use the **ip igmp snooping proxy** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping proxy general-queries

no ip igmp snooping proxy general-queries

Syntax Description

general-queries	Specifies proxy for general queries.

Defaults

None

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

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

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

This example shows how to configure proxy for general queries:

```
switch(config)# ip igmp snooping proxy general-queries
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping querier

To configure a snooping querier on an interface when you do not enable Protocol Independent Multicast (PIM) because the 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.

Defaults

None

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

This example shows how to configure a snooping querier:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping querier 172.20.52.106
switch(config-vlan-config)#
```

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

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# no ip igmp snooping querier
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping query-interval

To configure the interval between query transmission, use the **ip igmp snooping query-interval** command. To remove the snooping querier, use the **no** form of this command.

ip igmp snooping query-interval *sec*

no ip igmp snooping query-interval *sec*

Syntax Description

sec	Interval in seconds. The range is from 1 to 18000.

Defaults

125 seconds

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the interval between query transmission:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping query-interval 3
switch(config-vlan-config)# er than mrt, configure query-max-response-time
first
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping query-max-response-time

To configure the MRT for query messages, use the **ip igmp snooping query-max-response-time** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping query-max-response-time *sec*

no ip igmp snooping query-max-response-time *sec*

Syntax Description

sec	Time in seconds. The range is from 1 to 25.

Defaults

10 seconds

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the MRT for query messages:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping query-max-response-time 20
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping querier-timeout

To configure the querier timeout for IGMPv2, use the **ip igmp snooping querier-timeout** command. To remove the snooping querier, use the **no** form of this command.

ip igmp snooping querier-timeout *sec*

no ip igmp snooping querier-timeout *sec*

Syntax Description

sec	Time in seconds. The range is from 1to 65535.

Defaults

255 seconds

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the querier timeout for IGMPv2:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping querier-timeout 3
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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.

Defaults

Enabled

Command Modes

Global configuration (config)
VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.
4.0(3)	Global configuration mode was added.

Usage Guidelines

When you disable report suppression, all IGMP reports are sent as is to multicast-capable routers.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

This command does not require a license.

Examples

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

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

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

```
switch(config)# vlan configuration 10
```

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

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping robustness-variable

To configure the RFC defined robustness variable, use the **ip igmp snooping robustness-variable** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping robustness-variable *value*

no ip igmp snooping robustness-variable *value*

Syntax Description

value	Count value. The range is from 1 to 7.

Defaults

2

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the configure the RFC defined robustness variable:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping robustness-variable 4
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping startup-query-count

To configure the number of queries sent at startup, use the **ip igmp snooping startup-query-count** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping startup-query-count *value*

no ip igmp snooping startup-query-count *value*

Syntax Description

value	Count value. The range is from 1 to 10.

Defaults

None

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the number of queries sent at startup:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping startup-query-count 4
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping startup-query-interval

To configure the query interval at startup, use the **ip igmp snooping startup-query-interval** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping startup-query-interval *sec*

no ip igmp snooping startup-query-interval *sec*

Syntax Description

sec	Interval in seconds. The range is from 1 to 18000.

Defaults

None

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the query interval at startup:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping startup-query-interval 4
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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** *if-type if-number*

no ip igmp snooping static-group *group* [**source** *source*] **interface** *if-type 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.
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.

Defaults

None

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

Examples

This example shows how to configure a static member of a multicast group:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# ip igmp snooping static-group 230.0.0.1 interface ethernet 2/1
switch(config-vlan-config)#
```

This example shows how to remove a static member of a multicast group:

```
switch(config)# vlan configuration 10
switch(config-vlan-config)# no ip igmp snooping static-group 230.0.0.1 interface ethernet
2/1
switch(config-vlan-config)#
```

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

ip igmp snooping version

To configure the IGMP version number for VLAN, use the **ip igmp snooping version** command. To return to the default settings, use the **no** form of this command.

ip igmp snooping version *value*

no ip igmp snooping version *value*

Syntax Description

value	Version number value. The range is from 2 to 3.

Defaults

None

Command Modes

VLAN configuration (config-vlan)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure IGMP version number for VLAN:

```
switch(config-vlan-config)# ip igmp snooping version 3
switch(config-vlan-config)#
```

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.

Defaults

Disabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(3)	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
```

This example shows how to remove IGMPv3 report suppression:

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

Related Commands

Command	Description
show ip igmp snooping	Displays IGMP snooping information.

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.

Defaults

Enabled

Command Modes

VLAN configuration (config-vlan) until Cisco NX-OS Release 5.1.

Configure VLAN (config-vlan-config) since Cisco NS-OS Release 5.1(1). You cannot configure this command in the VLAN configuration mode in Cisco Release NX-OS 5.1 and higher.

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
NX-OS 5.1(1)	The mode to configure this command on a VLAN changed to the configure VLAN mode (config-vlan-config)#. You can no longer configure this command in the VLAN configuration mode (config-vlan)#.
4.0(3)	This command was introduced.

Usage Guidelines

If this setting is disabled for the device, which is the default value, 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.

See the Layer2 Command Reference Guide for information on entering the Configure VLAN mode by using the vlan configuration command.

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

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

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

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) SSM range, see the **ip pim ssm range** command.
source	IP multicast address source.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

To display SSM translation commands, use this command line:

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

This command does not require a license.

Examples

This example shows how to configure a translation:

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

This example shows how to remove a translation:

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

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.

Defaults

The query count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a query count:

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

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

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

Defaults

The query interval is 31 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a startup query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip igmp startup-query-interval 25
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 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 and set the maximum number of (*, G) and (S, G) entries allowed on the interface.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a state limit:

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

This example shows how to remove a state limit:

```
switch(config)# interface ethernet 2/2
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.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

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, group range, and source prefix to filter messages with the **match ip multicast** command.

This command does not require a license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# 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 ip igmp static oif 230.0.0.0
switch(config-if)#
```

Related Commands

Command	Description
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.

Defaults

The version number is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a 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)# ip igmp version 3
switch(config-if)#
```

This example shows how to reset the IGMP version to the default:

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

Related Commands

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

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*} | *if-type if-number*} [*pref*] [**vrf** *vrf-name*]

no ip mroute {*ip-addr ip-mask* | *ip-prefix*} {{*next-hop* | *nh-prefix*} | *if-type if-number*} [*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.
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.
pref	(Optional) Route preference. The range is from 1 to 255. The default is 1.
vrf *vrf-name*	(Optional) Applies to the specified virtual routing and forwarding (VRF) instance.

Defaults

The route preference is 1.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 192.168.1.0/24 192.168.2.0/24
switch(config)#
```

This example shows how to remove an RPF static route:

```
switch(config)# no ip mroute 192.168.1.0/24 192.168.2.0/24
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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure an MSDP peer description:

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

This example shows how to remove an MSDP peer description:

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

Related Commands

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

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

Syntax Description

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

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.
4.1(3)	Changed the buffer type arguments to required.

Usage Guidelines

This command does not require a 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.

Defaults

The routes are not flushed.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

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

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

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

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

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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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.

Defaults

The keepalive interval is 60 seconds.

The keepalive timeout is 90 seconds.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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 the mesh group.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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 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.

Defaults

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

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

We recommend that you use a loopback interface for the RP address.

This command requires the Enterprise Services license.

Examples

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

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

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

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

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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	The remote AS number was made an optional argument.

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 Enterprise Services license.

Examples

This example shows how to configure an MSDP peer:

```
switch(config)# ip msdp peer 192.168.1.10 connect-source ethernet 1/0 remote-as 8
```

This example shows how to remove an MSDP peer:

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

Related Commands

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.

Defaults

The reconnect interval is 10 seconds.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

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

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

Related Commands

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.

Defaults

The SA message interval is 60 seconds.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to configure an SA transmission interval:

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

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

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

Related Commands

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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a Source-Active (SA) limit for a peer:

```
switch(config)# ip msdp sa-limit 192.168.1.10 5000
```

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

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

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

This example shows how to disable filtering:

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

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to enable filtering of SA messages:

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

This example shows how to disable filtering:

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

Related Commands

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.

Defaults

Enabled

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to disable an MSDP peer:

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

This example shows how to enable an MSDP peer:

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

Related Commands

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

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 RP in the Anycast-RP set.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

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

This command requires the Enterprise Services license.

Examples

This example shows how to configure a PIM Anycast-RP peer:

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

This example shows how to remove a peer:

```
switch(config)# no ip pim anycast-rp 192.0.2.3 192.0.2.31
```

Related Commands

Command	Description
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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# ip pim auto-rp listen forward
```

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

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

Related Commands

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.

Defaults

The TTL is 32.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **ip pim send-rp-discovery** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to configure an Auto-RP mapping agent:

```
switch(config)# ip pim auto-rp mapping-agent ethernet 2/1
```

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

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

Related Commands

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 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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to enable a route-map policy to filter Auto-RP Discover messages:

```
switch(config)# ip pim auto-rp mapping-agent-policy my_mapping_agent_policy
```

This example shows how to disable filtering:

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

Related Commands

Command	Description
show ip pim rp	Displays information about PIM 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*] | [**bidir**]}

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

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.
bidir	(Optional) Specifies that the group range is advertised in PIM bidirectional (Bidir) mode.

Defaults

The TTL is 32.
The Announce message interval is 60 seconds.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **scope**, **interval**, and **bidir** keywords can be entered once and in any order.

The **ip pim send-rp-announce** command is an alternative form of this command.

Using a route map, you can add group ranges that this auto RP candidate-RP can serve.

Note Use the same configuration guidelines for the route-map auto-rp-range that you used when you create a route map for static RPS.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a PIM Auto-RP candidate RP:

```
switch(config)# ip pim auto-rp rp-candidate ethernet 2/1 group-list 239.0.0.0/24
```

This example shows how to remove a PIM Auto-RP candidate RP:

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

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can specify the RP and group addresses, and whether the type is Bidir or ASM with the **match ip multicast** command in a route-map policy.

This command requires the Enterprise 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
```

Related Commands

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

ip pim bidir-rp-limit

To configure the number of bidirectional (Bidir) RPs for use in IPv4 Protocol Independent Multicast (PIM), use the **ip pim bidir-rp-limit** command. To reset the number of RPs to the default, use the **no** form of this command.

ip pim bidir-rp-limit *limit*

no ip pim bidir-rp-limit *limit*

Syntax Description

limit	Limit for the number of Bidir RPs permitted in PIM. The range is from 0 to 8. The default is 6.

Defaults

The Bidir RP limit is 6.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(2)	This command was introduced.

Usage Guidelines

Because the maximum ordinal count of designated forwarders (DFs) is 8, the PIM and IPv6 PIM RP limits should be no more than 8.

To display the Bidir RP limit configured, use this command line:

```
switch(config)# show running-config | include bidir
```

This command requires the Enterprise Services license.

Examples

This example shows how to configure the number of Bidir RPs:

```
switch(config)# ip pim bidir-rp-limit 6
```

This example shows how to reset the number of Bidir RPs to the default:

```
switch(config)# no ip pim bidir-rp-limit 6
```

Related Commands

Command	Description
ipv6 pim bidir-rp-limit	Configures the number of Bidir RPs for PIM6.
show running-config	Displays information about the running-system configuration.

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.

Defaults

The interface is not on a PIM border.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure an interface on a PIM border:

```
switch(config)# ip pim border
```

This example shows how to remove an interface from a PIM border:

```
switch(config)# no ip pim border
```

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to allow the BSR client routers to filter BSR messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim bsr bsr-policy my_bsr_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim bsr bsr-policy
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM 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.

Defaults

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

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to configure a router as a BSR candidate:

```
switch(config)# ip pim bsr-candidate ethernet 2/2
```

This example shows how to remove a router as a BSR candidate:

```
switch(config)# no ip pim bsr-candidate
```

Related Commands

Command	Description
show ip pim rp	Displays information about PIM 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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

The **ip pim bsr listen** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to forward BSR and Candidate-RP messages:

```
switch(config)# ip pim bsr forward
```

This example shows how to disable forwarding:

```
switch(config)# no ip pim bsr forward
```

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

The **ip pim bsr forward** command is an alternative form of this command.

This command requires the Enterprise 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
```

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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can specify the RP and group addresses and whether the type is Bidir or ASM with the **match ip multicast** command in a route-map policy.

This command requires the Enterprise Services license.

Examples

This example shows how to filter Candidate-RP messages:

```
switch(config)# ip pim bsr rp-candidate-policy my_bsr_rp_candidate_policy
```

This example shows how to disable message filtering:

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

Related Commands

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.

Defaults

The DR priority is 1.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure the DR priority on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim dr-priority 5
```

This example shows how to reset the DR priority on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim dr-priority
```

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** | **bidir** | **cli** | **hello** | **join-prune** | **null-register** | **packet** | **pim-internal** | **rp** | **vrf**} **size** *buffer-size*

no ip pim event-history {**assert-receive** | **bidir** | **cli** | **hello** | **join-prune** | **null-register** | **packet** | **pim-internal** | **rp** | **vrf**} **size** *buffer-size*

Syntax Description

assert-receive	Configures the assert receive event history buffer.
bidir	Configures the Bidir event history buffer.
cli	Configures the CLI event history buffer.
hello	Configures the hello event history buffer.
join-prune	Configures the join-prune event history buffer.
null-register	Configures the null register event history buffer.
packet	Configures the packet event history buffer.
pim-internal	Configures the PIM internal event history buffer.
rp	Configures the rendezvous point (RP) event history buffer.
vrf	Configures the virtual routing and forwarding (VRF) event history buffer.
size	Specifies the size of the buffer to allocate.
buffer-size	Buffer size is one of the following values: **disabled**, **large**, **medium**, or **small**. The default buffer size is **small**.

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a 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.

Defaults

The routes are not flushed.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to remove routes when the PIM process is restarted:

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

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

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

Related Commands

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.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to enable a 3-DES encrypted key for PIM hello-message authentication:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim hello-authentication-ah-md5 3 myauthkey
```

This example shows how to disable PIM hello-message authentication:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim hello-authentication-ah-md5
```

Related Commands

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 1000 to 18724286. The default is 30000.
	Note We do not support aggressive hello intervals. Any value below 30000 milliseconds is an aggressive PIM hello-interval value.

Defaults

The PIM hello interval is 30,000 milliseconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.2	Changed the minimum value from 1 millisecond to 1000 milliseconds and maximum value from 4294967295 to 18724286.
4.0(1)	This command was introduced.

Usage Guidelines

We recommend that you use BFD for PIM instead of non-default timers.

.This command requires the Enterprise Services license.

Examples

This example shows how to configure the PIM hello-message interval on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim hello-interval 20000
```

This example shows how to reset the PIM hello-message interval on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim hello-interval
```

Related Commands

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.

Defaults

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

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(3)	The optional **in** and **out** parameters were added.

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 on only incoming messages, use the optional **in** keyword; to specify filtering on only outgoing messages, use the optional **out** keyword.

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

You can specify group, group and source, or group and RP addresses to filter messages with the **match ip multicast** command.

This command requires the Enterprise Services license.

Examples

This example shows how to filter PIM join-prune messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim jp-policy my_jp_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
```

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

Related Commands

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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to generate a syslog message that lists the PIM neighbor state changes:

```
switch(config)# ip pim log-neighbor-changes
```

This example shows how to disable logging:

```
switch(config)# no ip pim log-neighbor-changes
```

Related Commands

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.

Defaults

Forms adjacency with all neighbors.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to configure a policy that determines which PIM neighbors should become adjacent:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim neighbor-policy
```

This example shows how to reset to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ip pim neighbor-policy
```

Related Commands

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.

Defaults

Joins are triggered only if the OIF list is not empty.

Command Modes

VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(3)	This command was introduced.

Usage Guidelines

To prebuild the SPT for all known (S,G)s joins in the routing table by triggering PIM joins upstream, even in the absence of any receivers, use the **ip pim pre-build-spt** command.

By default, PIM (S,G) joins are triggered upstream only if the OIF-list for the (S,G) is not empty. It is useful in certain scenarios—for example, on the virtual port-channel (vPC) nonforwarding router—to prebuild the SPTs and maintain the (S,G) states even when the system is not forwarding on these routes. Prebuilding the SPT ensures faster convergence when a vPC failover occurs.

When you are running virtual port channels (vPCs), enabling this feature causes both vPC peer switches to join the SPT, even though only one vPC peer switch actually routes the multicast traffic into the vPC domain. This behavior results in the multicast traffic passing over two parallel paths from the source to the vPC switch pair, consuming bandwidth on both paths. Additionally, when both vPC peer switches join the SPT, one or more upstream devices in the network may be required to perform additional multicast replications to deliver the traffic on both parallel paths toward the receivers in the vPC domain.

This command requires the Enterprise 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.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to enable filtering of PIM Register messages:

```
switch(config)# ip pim register-policy my_register_policy
```

This example shows how to disable message filtering:

```
switch(config)# no ip pim register-policy
```

Related Commands

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.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a rate limit for PIM data registers:

```
switch(config)# ip pim register-rate-limit 1000
```

This example shows how to remove a rate limit:

```
switch(config)# no ip pim register-rate-limit
```

Related Commands

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

ip pim register-until-stop

To configure the device to continue to send PIM data registers from the first-hop router until a PIM register-stop message is received, use the **ip pim register-until-stop** command. To return to default setting, use the **no** form of this command.

ip pim register-until-stop

no ip pim register-until-stop

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

Must have PIM enabled.

This command does not require a license.

Examples

This example shows how to configure send data registers till register stop is received:

```
switch(config)# ip pim register-until-stop
```

Related Commands

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

ip pim rp-address

To configure an IPv4 Protocol Independent Multicast (PIM) static route processor (RP) address for a multicast group range, use the **ip pim rp-address** command. To remove a static RP address, use the **no** form of this command.

ip pim rp-address *rp-address* [**group-list** *prefix* | **override** | **route-map** *policy-name*] [**bidir**]

no ip pim rp-address *rp-address* [**group-list** *prefix* | **override** | **route-map** *policy-name*] [**bidir**]

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.
bidir	(Optional) Specifies to handle a group range in PIM bidirectional (Bidir) mode.

Defaults

The group range is treated in ASM mode.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	Added the keyword **override**.
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

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.

You can use this override provision, if you want the static RPs always to override the dynamic ones.

This command requires the Enterprise 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) route processor (RP) candidate, use the **ip pim rp-candidate** command. To remove the router as an RP candidate, use the **no** form of this command.

ip pim [**bsr**] **rp-candidate** *if-type if-number* {**group-list** *prefix*} [**priority** *priority*] [**interval** *interval*] [**bidir**]

no ip pim [**bsr**] **rp-candidate** [*if-type if-number*] {**group-list** *prefix*} [**priority** *priority*] [**interval** *interval*] [**bidir**]

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.
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.
bidir	(Optional) Specifies the group range advertised in PIM bidirectional (Bidir) mode.

Defaults

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

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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.

This command requires the Enterprise Services license.

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.

Examples

This example shows how to configure the router as a PIM BSR RP candidate:

```
switch(config)# ip pim rp-candidate e 2/11 group-list 239.0.0.0/24
```

This example shows how to remove the router as an RP candidate:

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

Related Commands

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 route processor (RP), use the **ip pim send-rp-announce** command. To remove an Auto-RP candidate RP, use the **no** form of this command.

ip pim send-rp-announce *if-type if-number* {**group-list** *prefix*} {[**scope** *ttl*] | [**interval** *interval*] | [**bidir**]}

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

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 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.
bidir	(Optional) Specifies that the group range is advertised in PIM bidirectional (Bidir) mode.

Defaults

The TTL is 32.
The Auto-RP Announce message interval is 60 seconds.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **scope**, **interval**, and **bidir** 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 Enterprise 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
```

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

no ip pim send-rp-discovery [*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.

Defaults

The TTL is 32.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise 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
```

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 180 to 57600 seconds.
sg-list *route-map*	(Optional) Specifies S,G values to which the timer applies.

Defaults

The default is 180 seconds.

The timer applies to all (S,G) multicast routes in the routing table.

Command Modes

VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure the expiry interval to 300 seconds for all (S,G) multicast routes:

```
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.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to enable PIM sparse mode on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ip pim sparse-mode
```

This example shows how to disable PIM on an interface:

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

Related Commands

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 name that defines the group prefixes where this feature is applied.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Keyword **group-list** was added and a route-map name is used to define groups.

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.

You must have enabled PIM before you can use this command.

Note This command is not supported for virtual port channels (vPCs).

Note Prior to Cisco NX-OS Release 5.2(3), the route map specified by the **ip pim spt-threshold infinity group-list** *route-map* command was limited to 50 sequence lines. Starting in Cisco NX-OS Release 5.2(3), the number of sequence lines in the route map has increased to 500. If you specify more than 500 sequence lines in a route map, they are not functional.

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.

Defaults

The SSM range is 232.0.0.0/8.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# ip pim ssm policy my_ssm_policy
```

This example shows how to reset the group range to the default:

```
switch(config)# no ip pim ssm policy my_ssm_policy
```

Related Commands

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**} | **route-map** *policy-name*}

no ip pim ssm {**range** {*groups* | **none**} | **route-map** *policy-name*}

Syntax Description

groups	List of up to four group range prefixes.
none	Removes all group ranges.
route-map *policy-name*	Specifies the route-map policy name.

Defaults

The SSM range is 232.0.0.0/8.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	The keyword **none** was added.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

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 Enterprise Services license.

Examples

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

```
switch(config)# ip pim ssm range 239.128.1.0/24
```

This example shows how to reset the group range to the default:

```
switch(config)# no ip pim ssm range none
```

This example shows how to remove all group ranges:

```
switch(config)# ip pim ssm range none
```

Related Commands

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

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 4294967295. 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.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to configure a state entry limit with a number of state entries reserved for routes in a policy map:

```
switch(config)# ip pim state-limit 100000 reserved my_reserved_policy 40000
```

This example shows how to remove the limits on state entries:

```
switch(config)# no ip pim state-limit
```

Related Commands

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

ip pim use-shared-tree-only

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

ip pim use-shared-tree-only group-list *policy-name*

no ip pim use-shared-tree-only [**group-list** *policy-name*]

Syntax Description

policy-name	Route-map policy name that defines the group prefixes where this feature is applied.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	The keyword **group-list** was added and a route-map policy name was used to define groups.

Usage Guidelines

You can use the **match ip multicast** command in a route-map policy to specify the groups where shared trees should be enforced.

You must have enabled PIM before you can use this command.

Note This command is not supported for virtual port channels (vPCs).

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_policy:

```
switch(config)# ip pim use-shared-tree-only group-list my_group_policy
```

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

```
switch(config)# no ip pim use-shared-tree-only
```

Related Commands

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

ip routing multicast event-history

To configure the size of the IPv4 Multicast Routing Information Base (MRIB) event history buffers, use the **ip routing multicast event-history** command. To revert to the default buffer size, use the **no** form of this command.

ip routing multicast event-history {**cli** | **mfdm-debugs** | **mfdm-events** | **mfdm-stats** | **rib** | **vrf**} **size** *buffer-size*

no ip routing multicast event-history {**cli** | **mfdm** | **mfdm-stats** | **rib** | **vrf**} **size** *buffer-size*

Syntax Description

cli	Configures the CLI event history buffer.
mfdm-debugs	Configures the Multicast Forwarding Distribution Module (MFDM) debug event history buffer.
mfdm-events	Configures the (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 (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.
4.2(1)	Added the keyword **mfdm-events**. Changed the keyword **mfdm** to **mfdm-debugs**.

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 holddown

To configure the IPv4 multicast routing initial holddown period, use the **ip routing multicast holddown** command. To revert to the default holddown period, use the **no** form of this command.

[**ip** | **ipv4**] **routing multicast holddown** *holddown-period*

no [**ip** | **ipv4**] **routing multicast holddown** *holddown-period*

Syntax Description

ipv4	(Optional)
holddown-period	Initial route holddown period in seconds. The range is from 90 to 210. Specify 0 to disable the holddown period. The default is 210.

Defaults

The holddown period is 210 seconds.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

To display the holddown period configuration, use this command line:

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

This command does not require a license.

Examples

This example shows how to configure the routing holddown period:

```
switch(config)# ip routing multicast holddown 100
switch(config)#
```

Related Commands

Command	Description
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.

Defaults

No software replication.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(3)	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.

ipv6 mld access-group

To enable a Multicast Listener Discovery (MLD) route-map policy to control the multicast groups that hosts on a subnet serviced by an interface can join, use the **ipv6 mld access-group** command. To disable the route-map policy, use the **no** form of this command.

ipv6 [**icmp**] **mld access-group** *policy-name*

no ipv6 [**icmp**] **mld access-group** [*policy-name*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
policy-name	Specifies the route-map policy name.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to enable an MLD route-map policy:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld access-group
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld group-timeout

To configure the Multicast Listener Discovery (MLD) group membership timeout, use the **ipv6 mld group-timeout** command. To reset to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld group-timeout** *time*

no ipv6 [**icmp**] **mld group-timeout** [*time*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
time	Time in seconds. The range is from 3 to 65,535. The default is 260.

Defaults

The group membership timeout is 260 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a group membership timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld group-timeout
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld immediate-leave

To enable the device to remove the group entry from the IPv6 multicast routing table immediately upon receiving a leave message for the group, use the **ipv6 mld immediate-leave** command. To disable the immediate leave option, use the **no** form of this command.

ipv6 [**icmp**] **mld immediate-leave**

no ipv6 [**icmp**] **mld immediate-leave**

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.

Defaults

The immediate leave feature is disabled.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(3)	This command was introduced.

Usage Guidelines

Use the **ipv6 mld immediate-leave** command only when there is one receiver behind the interface for a given group.

This command does not require a license.

Examples

This example shows how to enable the immediate leave feature:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld immediate-leave
```

This example shows how to disable the immediate leave feature:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 mld immediate-leave
```

Related Commands

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

ipv6 mld join-group

To statically bind a multicast group to an interface, use the **ipv6 mld join-group** command. To remove a group binding, use the **no** form of this command.

ipv6 [**icmp**] **mld join-group** {*group* [**source** *source*] | **route-map** *policy-name*}

no ipv6 [**icmp**] **mld join-group** {*group* [**source** *source*] | **route-map** *policy-name*}

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
group	Multicast group IPv6 address.
source *source*	(Optional) Specifies a source IP address for an MLDv2 (S, G) channel.
route-map *policy-name*	Specifies the route-map policy name that defines the group prefixes where this feature is applied.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

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.

The **match ipv6 multicast** command is the only **match** command that is evaluated in the route map. You can specify the group prefix, group range, and source prefix to filter messages with the **match ipv6 multicast** command.

Note A source tree is built for the (S, G) state only if you enable MLDv2, which is the default.

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

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld join-group FFFE::1
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 ipv6 mld join-group FFFE::1
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld last-member-query-count

To configure the number of times that the software sends a Multicast Listener Discovery (MLD) query in response to a host leave message, use the **ipv6 mld last-member-query-count** command. To reset the query interval to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld last-member-query-count** *count*

no ipv6 [**icmp**] **mld last-member-query-count** [*count*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
count	Query count. The range is from 1 to 5. The default is 2.

Defaults

The query count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a query count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld last-member-query-count
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld 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 **ipv6 mld last-member-query-response-time** command. To reset the interval to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld last-member-query-response-time** *interval*

no ipv6 [**icmp**] **mld last-member-query-response-time** [*interval*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
interval	Query interval in seconds. The range is from 1 to 25. The default is 1.

Defaults

The query interval is 1.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld last-member-query-response-time
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld querier-timeout

To configure the Multicast Listener Discovery (MLD) querier timeout for MLDv1, use the **ipv6 mld querier-timeout** command. To reset the timeout to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld querier-timeout** *timeout*

no ipv6 [**icmp**] **mld querier-timeout** [*timeout*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
timeout	Timeout in seconds. The range is from 1 to 65,535. The default is 255.

Defaults

The querier timeout is 255 seconds

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **ipv6 mld query-timeout** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a querier timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld querier-timeout
switch(config-if)#
```

Related Commands

Command	Description
ipv6 mld query-timeout	Configures a querier timeout.
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld query-interval

To configure the Multicast Listener Discovery (MLD) interval between query transmissions, use the **ipv6 mld query-interval** command. To reset the interval to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld query-interval** *interval*

no ipv6 [**icmp**] **mld query-interval** [*interval*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
interval	Interval in seconds. The range is from 1 to 18,000. The default is 125.

Defaults

The query interval is 125 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld query-interval
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld query-max-response-time

To configure the Multicast Listener Discovery (MLD) maximum response time for query messages, use the **ipv6 mld query-max-response-time** command. To reset the response time to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld query-max-response-time** *time*

no ipv6 [**icmp**] **mld query-max-response-time** [*time*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
time	Time in seconds. The range is from 1 to 8387. The default is 10.

Defaults

The maximum query response time is 10 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld query-max-response-time
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld query-timeout

To configure the Multicast Listener Discovery (MLD) querier timeout for MLDv1, use the **ipv6 mld query-timeout** command. To reset the timeout to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld query-timeout** *timeout*

no ipv6 [**icmp**] **mld query-timeout** [*timeout*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
timeout	Timeout in seconds. The range is from 1 to 65,535. The default is 255.

Defaults

The querier timeout is 255 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **ipv6 mld querier-timeout** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a querier timeout:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld query-timeout
switch(config-if)#
```

Related Commands

Command	Description
ipv6 mld querier-timeout	Configures a querier timeout.
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld report-link-local-groups

To enable Multicast Listener Discovery (MLD) to send reports for link-local groups, use the **ipv6 mld report-link-local-groups** command. To disable sending reports to link-local groups, use the **no** form of this command.

ipv6 [**icmp**] **mld report-link-local-groups**

no ipv6 [**icmp**] **mld report-link-local-groups**

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld report-link-local-groups
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld report-policy

To enable an access policy that is based on a route-map policy for Multicast Listener Discovery (MLD) reports, use the **ipv6 mld report-policy** command. To disable the route-map policy, use the **no** form of this command.

ipv6 [**icmp**] **mld report-policy** *policy-name*

no ipv6 [**icmp**] **mld report-policy** [*policy-name*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
policy-name	Route-map policy name.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld report-policy my_report_policy
switch(config-if)#
```

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 mld report-policy
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld robustness-variable

To configure a Multicast Listener Discovery (MLD) robustness count that you can tune to reflect the expected packet loss on a congested network, use the **ipv6 mld robustness-variable** command. To reset the count to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld robustness-variable** *count*

no ipv6 [**icmp**] **mld robustness-variable** [*count*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
count	Robustness count. The range is from 1 to 7. The default is 2.

Defaults

The robustness count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a robustness count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld robustness-variable
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld ssm-translate

To translate Multicast Listener Discovery (MLD) version 1 reports to create (S, G) state entries so that the router treats them as MLDv2 membership reports, use the **ipv6 mld ssm-translate** command. To remove the translation, use the **no** form of this command.

ipv6 [**icmp**] **mld ssm-translate** *group source*

no ipv6 [**icmp**] **mld ssm-translate** *group source*

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
group	IPv6 multicast group range. By default, the group prefix range is FF3x/96. To modify the IPv6 Protocol Independent Multicast (PIM6) SSM range, see the **ipv6 pim ssm range** command.
source	IPv6 multicast source address.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

To display SSM translation commands, use this command line:

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

This command requires the Enterprise Services license.

Examples

This example shows how to configure a translation:

```
switch(config)# ipv6 mld ssm-translate FF30::0/16 2001:0DB8:0:ABCD::1
```

This example shows how to remove a translation:

```
switch(config)# no ipv6 mld ssm-translate FF30::0/16 2001:0DB8:0:ABCD::1
```

Related Commands

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

ipv6 mld startup-query-count

To configure the query count used when the Multicast Listener Discovery (MLD) process starts up, use the **ipv6 mld startup-query-count** command. To reset the query count to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld startup-query-count** *count*

no ipv6 [**icmp**] **mld startup-query-count** [*count*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
count	Query count. The range is from 1 to 10. The default is 2.

Defaults

The query count is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a query count:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld startup-query-count
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld startup-query-interval

To configure the query interval used when the Multicast Listener Discovery (MLD) process starts up, use the **ipv6 mld startup-query-interval** command. To reset the query interval to the default, use the **no** form of this command.

ipv6 [**icmp**] **mld startup-query-interval** *interval*

no ipv6 [**icmp**] **mld startup-query-interval** [*interval*]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
interval	Query interval in seconds. The range is from 1 to 18,000. The default is 31.

Defaults

The startup query interval is 31 seconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a startup query interval:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld startup-query-interval
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld state-limit

To configure the Multicast Listener Discovery (MLD) maximum states allowed, use the **ipv6 mld state-limit** command. To remove the limit, use the **no** form of this command.

ipv6 [**icmp**] **mld state-limit** *max-states* [**reserved** *reserve-policy max-reserved*]

no ipv6 [**icmp**] **mld state-limit** [*max-states* [**reserved** *reserve-policy max-reserved*]]

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
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 and set the maximum number of (*, G) and (S, G) entries allowed on the interface.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a state limit:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld 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 ipv6 mld state-limit
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 mld static-oif

To statically bind a multicast group to the outgoing interface (OIF), which is handled by the device hardware, use the **ipv6 mld static-oif** command. To remove the static OIF, use the **no** form of this command.

ipv6 [**icmp**] **mld static-oif** {*group* [**source** *source*] | **route-map** *policy-name*}

no ipv6 [**icmp**] **mld static-oif** {*group* [**source** *source*] | **route-map** *policy-name*}

Syntax Description

icmp	(Optional) Specifies the Internet Control Message Protocol (ICMP) designator.
group	Multicast group IPv6 address. If you specify only the group address, the (*, G) state is created.
source *source*	(Optional) Configures the source IPv6 address for MLDv2 and creates the (S, G) state. **Note** A source tree is built for the (S, G) state only if you enable MLDv2, which is the default.
route-map *policy-name*	Specifies the route-map policy name that defines the group prefixes where this feature is applied.

Defaults

None

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

Usage Guidelines

The **match ipv6 multicast** command is the only **match** command that is evaluated in the route map. You can specify the group prefix, group range, and source prefix to filter messages with the **match ip**v6 **multicast** command.

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 mld static-oif FFFE::1
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 ipv6 mld static oif FFFE::1
switch(config-if)#
```

Related Commands

Command	Description
show ipv6 mld local-groups	Displays information about the MLD local group membership.

ipv6 mld version

To configure the Multicast Listener Discovery (MLD) version on an interface, use the **ipv6 mld version** command. To reset the version to the default, use the **no** form of this command.

ipv6 mld version *version*

no ipv6 mld version [*version*]

Syntax Description

version	Version number. The number is 1 or 2. The default is 2.

Defaults

The version number is 2.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure the MLD version:

```
switch(config)# ipv6 mld version 1
```

This example shows how to reset the MLD version to the default:

```
switch(config)# no ipv6 mld version
```

Related Commands

Command	Description
show ipv6 mld interface	Displays information about ICMPv6 interfaces.

ipv6 pim anycast-rp

To configure an IPv6 Protocol Independent Multicast (PIM6) Anycast-RP peer for the specified Anycast-RP address, use the **ipv6 pim anycast-rp** command. To remove the peer, use the **no** form of this command.

ipv6 pim anycast-rp *anycast-rp rp-addr*

no ipv6 pim anycast-rp *anycast-rp rp-addr*

Syntax Description

anycast-rp	Address for the Anycast-RP address.
rp-addr	Address of the RP in the Anycast-RP set.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

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

This command requires the Enterprise Services license.

Examples

This example shows how to configure a PIM Anycast-RP peer:

```
switch(config)# ipv6 pim anycast-rp 2001:0db8:0:abcd::3 2001:0db8:0:abcd::31
```

This example shows how to remove a peer:

```
switch(config)# no ipv6 pim anycast-rp 2001:0db8:0:abcd::3 2001:0db8:0:abcd::31
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim bidir-rp-limit

To configure the number of bidirectional (Bidir) RPs for use in IPv6 Protocol Independent Multicast (PIM6), use the **ipv6 pim bidir-rp-limit** command. To reset the number of RPs to the default, use the **no** form of this command.

ipv6 pim bidir-rp-limit *limit*

no ipv6 pim bidir-rp-limit *limit*

Syntax Description

limit	Limit for the number of Bidir RPs permitted in PIM6. The range is from 0 to 8. The default is 2.

Defaults

The Bidir RP limit is 2.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(2)	This command was introduced.

Usage Guidelines

Because the maximum ordinal count of designated forwarders (DFs) is 8, the PIM and IPv6 PIM RP limits should be no more than 8.

To display the Bidir RP limit configured, use this command line:

```
switch(config)# show running-config | include bidir
```

This command requires the Enterprise Services license.

Examples

This example shows how to configure the number of Bidir RPs:

```
switch(config)# ipv6 pim bidir-rp-limit 6
```

This example shows how to reset the number of Bidir RPs to the default:

```
switch(config)# no ipv6 pim bidir-rp-limit 6
```

Related Commands

Command	Description
ip pim bidir-rp-limit	Configures the number of Bidir RPs for PIM.
show running-config	Displays information about the running-system configuration.

ipv6 pim border

To configure an interface on an IPv6 Protocol Independent Multicast (PIM6) border, use the **ipv6 pim border** command. To remove an interface from a PIM6 border, use the **no** form of this command.

ipv6 pim border

no ipv6 pim border

Syntax Description

This command has no arguments or keywords.

Defaults

The interface is not on a PIM6 border.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure an interface on a PIM6 border:

```
switch(config)# ipv6 pim border
```

This example shows how to remove an interface from a PIM6 border:

```
switch(config)# no ipv6 pim border
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim bsr bsr-policy

To enable filtering of IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) messages by the BSR client routers based on a route-map policy, use the **ipv6 pim bsr bsr-policy** command. To disable filtering, use the **no** form of this command.

ipv6 pim bsr bsr-policy *policy-name*

no ipv6 pim bsr bsr-policy [*policy-name*]

Syntax Description

policy-name	Route-map policy name.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can specify which source addresses to filter messages from with the **match ipv6 multicast** command in a route-map policy.

This command requires the Enterprise Services license.

Examples

This example shows how to enable filtering of BSR messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim bsr bsr-policy my_bsr_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim bsr bsr-policy
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim bsr-candidate

To configure the router as an IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) candidate, use the **ipv6 pim bsr-candidate** command. To remove a router as a BSR candidate, use the **no** form of this command.

ipv6 pim [**bsr**] **bsr-candidate** *if-type if-number* [**hash-len** *hash-len*] [**priority** *priority*]

no ipv6 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 128. The default is 126.
priority *priority*	(Optional) Specifies the BSR priority used in BSR messages. The range is from 0 to 255. The default is 64.

Defaults

The hash mask length is 126.
The priority is 64.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure a router as a BSR candidate:

```
switch(config)# ipv6 pim bsr-candidate ethernet 2/2
```

This example shows how to remove a router as a BSR candidate:

```
switch(config)# no ipv6 pim bsr-candidate
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim bsr forward

To listen to and forward IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) and Candidate-RP messages, use the **ipv6 pim bsr forward** command. To disable listening and forwarding, use the **no** form of this command.

ipv6 pim bsr forward [**listen**]

no ipv6 pim bsr [**forward** [**listen**]]

Syntax Description

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

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

This command has the same functionality as the **ipv6 pim bsr listen** command.

This command requires the Enterprise Services license.

Examples

This example shows how to listen to and forward BSR and Candidate-RP messages:

```
switch(config)# ipv6 pim bsr listen forward
```

This example shows how to disable listening and forwarding:

```
switch(config)# no ipv6 pim bsr listen forward
```

Related Commands

Command	Description
ipv6 pim bsr listen	Enables listening to and forwarding of BSR messages.
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim bsr listen

To listen to and forward IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) and Candidate-RP messages, use the **ipv6 pim bsr listen** command. To disable listening and forwarding, use the **no** form of this command.

ipv6 pim bsr listen [**forward**]

no ipv6 pim bsr [**listen** [**forward**]]

Syntax Description

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

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

A router configured as either a candidate RP or a candidate BSR will automatically listen to and forward all BSR protocol messages, unless an interface is configured with the domain border feature.

This command has the same functionality as the **ipv6 pim bsr forward** command

This command requires the Enterprise Services license.

Examples

This example shows how to listen to and forward BSR and Candidate-RP messages:

```
switch(config)# ipv6 pim bsr listen forward
```

This example shows how to disable listening and forwarding:

```
switch(config)# no ipv6 pim bsr listen forward
```

Related Commands

Command	Description
ipv6 pim bsr forward	Enables listening to and forwarding of BSR messages.
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim bsr rp-candidate-policy

To filter IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) Candidate-RP messages that are based on a route-map policy, use the **ipv6 pim bsr rp-candidate-policy** command. To disable filtering, use the **no** form of this command.

ipv6 pim bsr rp-candidate-policy *policy-name*

no ipv6 pim bsr rp-candidate-policy [*policy-name*]

Syntax Description

policy-name	Route-map policy name.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can specify the RP and group addresses and whether the type is Bidir or ASM with the **match ipv6 multicast** command in a route-map policy.

This command requires the Enterprise Services license.

Examples

This example shows how to filter Candidate-RP messages:

```
switch(config)# ipv6 pim bsr rp-candidate-policy my_bsr_rp_candidate_policy
```

This example shows how to disable message filtering:

```
switch(config)# no ipv6 pim bsr rp-candidate-policy
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim dr-priority

To configure the designated router (DR) priority that is advertised in IPv6 Protocol Independent Multicast (PIM6) hello messages, use the **ipv6 pim dr-priority** command. To reset the DR priority to the default, use the **no** form of this command.

ipv6 pim dr-priority *priority*

no ipv6 pim dr-priority [*priority*]

Syntax Description

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

Defaults

The DR priority is 1.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure the DR priority on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim dr-priority 5
```

This example shows how to reset the DR priority on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim dr-priority
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim event-history

To configure the size of the IPv6 Protocol Independent Multicast (PIM6) event history buffers, use the **ipv6 pim event-history** command. To revert to the default buffer size, use the **no** form of this command.

ipv6 pim event-history {**assert-receive** | **bidir** | **cli** | **hello** | **join-prune** | **null-register** | **packet** | **pim6-internal** | **rp** | **vrf**} **size** *buffer-size*

no ipv6 pim event-history {**assert-receive** | **bidir** | **cli** | **hello** | **join-prune** | **null-register** | **packet** | **pim6-internal** | **rp** | **vrf**} **size** *buffer-size*

Syntax Description

assert-receive	Configures the assert receive event history buffer.
bidir	Configures the Bidr 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.
pim6-internal	Configures the PIM internal event history buffer.
rp	Configures the rendezvous point (RP) event history buffer.
vrf	Configures the virtual routing and forwarding (VRF) event history buffer.
size	Specifies the size of the buffer to allocate.
buffer-size	Buffer size that is one of the following values: **disabled**, **large**, **medium**, or **small**. The default buffer size is **small**.

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the size of the PIM6 hello event history buffer:

```
switch(config)# ipv6 pim event-history hello size medium
switch(config)#
```

Related Commands

Command	Description
clear ipv6 pim event-history	Clears information in the IPv6 PIM event history buffers.
show ipv6 pim event-history	Displays information in the IPv6 PIM event history buffers.
show running-config pim6	Displays information about the running-system PIM6 configuration.

ipv6 pim flush-routes

To remove routes when the IPv6 Protocol Independent Multicast (PIM6) process is restarted, use the **ipv6 pim flush-routes** command. To leave routes in place, use the **no** form of this command.

ipv6 pim flush-routes

no ipv6 pim flush-routes

Syntax Description

This command has no arguments or keywords.

Defaults

The routes are not flushed.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise Services license.

Examples

This example shows how to remove routes when the PIM process is restarted:

```
switch(config)# ipv6 pim flush-routes
```

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

```
switch(config)# no ipv6 pim flush-routes
```

Related Commands

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

ipv6 pim hello-interval

To configure the IPv6 Protocol Independent Multicast (PIM6) hello-message interval on an interface, use the **ipv6 pim hello-interval** command. To reset the hello interval to the default, use the **no** form of this command.

ipv6 pim hello-interval *interval*

no ipv6 pim hello-interval [*interval*]

Syntax Description

interval	Interval in milliseconds. The range is from 1 to 4294967295. The default is 30000.

Defaults

The PIM6 hello interval is 30,000 milliseconds.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to configure the PIM6 hello-message interval on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim hello-interval 20000
```

This example shows how to reset the PIM6 hello message-interval on an interface to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim hello-interval
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim jp-policy

To filter IPv6 Protocol Independent Multicast (PIM6) join-prune messages that are based on a route-map policy, use the **ipv6 pim jp-policy** command. To disable filtering, use the **no** form of this command.

ipv6 pim jp-policy *policy-name* [**in** | **out**]

no ipv6 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.

Defaults

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

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(3)	The optional **in** and **out** parameters were added.

Usage Guidelines

Beginning with Cisco NX-OS Release 4.2(3), the **ipv6 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 arguments, that is no explicit direction, the system rejects further configurations if given with explicit direction.

You can specify group, group and source, or group and RP addresses to filter messages with the **match ipv6 multicast** command.

This command requires the Enterprise Services license.

Examples

This example shows how to filter PIM join-prune messages:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim jp-policy my_jp_policy
```

This example shows how to disable filtering:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim jp-policy
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim log-neighbor-changes

To generate syslog messages that list the IPv6 Protocol Independent Multicast (PIM6) neighbor state changes, use the **ipv6 pim log-neighbor-changes** command. To disable messages, use the **no** form of this command.

ipv6 pim log-neighbor-changes

no ipv6 pim log-neighbor-changes

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to generate syslog message that list the PIM6 neighbor state changes:

```
switch(config)# ipv6 pim log-neighbor-changes
```

This example shows how to disable logging:

```
switch(config)# no ipv6 pim log-neighbor-changes
```

Related Commands

Command	Description
logging level ipv6 pim	Configures logging level of PIM6 messages.

ipv6 pim neighbor-policy

To configure a route-map policy that determines which IPv6 Protocol Independent Multicast (PIM6) neighbors should become adjacent, use the **ipv6 pim neighbor-policy** command. To reset to the default, use the **no** form of this command.

ipv6 pim neighbor-policy *policy-name*

no ipv6 pim neighbor-policy [*policy-name*]

Syntax Description

policy-name	Route-map policy name.

Defaults

Forms adjacency with all neighbors.

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can use the **match ipv6 address** command in a route-map policy to specify which groups to become adjacent to.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a policy that determines which PIM6 neighbors should become adjacent:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim neighbor-policy
```

This example shows how to reset to the default:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim neighbor-policy
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim register-policy

To filter IPv6 Protocol Independent Multicast (PIM6) Register messages that are based on a route-map policy, use the **ipv6 pim register-policy** command. To disable message filtering, use the **no** form of this command.

ipv6 pim register-policy *policy-name*

no ipv6 pim register-policy [*policy-name*]

Syntax Description

policy-name	Route-map policy name.

Defaults

Disabled

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

You can use the **match ipv6 multicast** command in a route-map policy to specify the group or group and source addresses whose register messages that should be filtered.

To display the configured register policy, use this command line:

```
switch(config)# show running-config | include register-policy
```

This command requires the Enterprise Services license.

Examples

This example shows how to filter PIM6 Register messages:

```
switch(config)# ipv6 pim register-policy my_register_policy
```

This example shows how to disable message filtering:

```
switch(config)# no ipv6 pim register-policy
```

Related Commands

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

ipv6 pim register-rate-limit

To configure a rate limit for IPv6 Protocol Independent Multicast (PIM6) data registers, use the **ipv6 pim register-rate-limit** command. To remove a rate limit, use the **no** form of this command.

ipv6 pim register-rate-limit *rate*

no ipv6 pim register-rate-limit [*rate*]

Syntax Description

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

Defaults

None

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure a rate limit for PIM6 data registers:

```
switch(config)# ipv6 pim register-rate-limit 1000
```

This example shows how to remove a rate limit:

```
switch(config)# no ipv6 pim register-rate-limit
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6 interfaces.

ipv6 pim rp-address

To configure an IPv6 Protocol Independent Multicast (PIM6) static route processor (RP) address for a multicast group range, use the **ipv6 pim rp-address** command. To remove a static RP address, use the **no** form of this command.

ipv6 pim rp-address *rp-address* [**group-list** *prefix* | **route-map** *policy-name*] [**bidir**]

no ipv6 pim rp-address *rp-address* [**group-list** *prefix* | **route-map** *policy-name*] [**bidir**]

Syntax Description

rp-address	IPv6 address of the router, which is the RP for the group range.
group-list *prefix*	(Optional) Specifies a group range for a static RP.
route-map *policy-name*	Specifies the route-map policy name.
bidir	(Optional) Specifies to handle group ranges in PIM6 bidirectional (Bidir) mode.

Defaults

The group range is treated in ASM mode.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

Usage Guidelines

The **match ipv6 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 ipv6 multicast** command.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a PIM6 static RP address for a group range:

```
switch(config)# ipv6 pim rp-address 2001:0db8:0:abcd::1 group-list ff1e:abcd:def1::0/96
```

This example shows how to remove a static RP address:

```
switch(config)# no ipv6 pim rp-address 2001:0db8:0:abcd::1
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim rp-candidate

To configure the router as an IPv6 Protocol Independent Multicast (PIM6) bootstrap router (BSR) route processor (RP) candidate, use the **ipv6 pim rp-candidate** command. To remove the router as an RP candidate, use the **no** form of this command.

ipv6 pim [**bsr**] **rp-candidate** *if-type if-number* **group-list** *prefix* [**priority** *priority*] [**interval** *interval*] [**bidir**]

no ipv6 pim [**bsr**] **rp-candidate** [*if-type if-number*] [**group-list** *prefix*] [**priority** *priority*] [**interval** *interval*] [**bidir**]

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.
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.
bidir	(Optional) Specifies the group range advertised in PIM6 bidirectional (Bidir) mode.

Defaults

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

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

We recommend that you configure the candidate RP interval to a minimum of 15 seconds.

This command requires the Enterprise Services license.

Examples

This example shows how to configure the router as a PIM6 BSR RP candidate:

```
switch(config)# ipv6 pim rp-candidate e 2/11 group-list ff1e:abcd:def1::0/24
```

This example shows how to remove the router as an RP candidate:

```
switch(config)# no ipv6 pim rp-candidate
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 pim sparse-mode

To enable IPv6 Protocol Independent Multicast (PIM6) sparse mode on an interface, use the **ipv6 pim sparse-mode** command. To disable PIM6 on an interface, use the **no** form of this command.

ipv6 pim sparse-mode

no ipv6 pim [**sparse-mode**]

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command Modes

Interface configuration (config-if)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to enable PIM6 sparse mode on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# ipv6 pim sparse-mode
```

This example shows how to disable PIM6 on an interface:

```
switch(config)# interface ethernet 2/2
switch(config-if)# no ipv6 pim
```

Related Commands

Command	Description
show ipv6 pim interface	Displays information about PIM6-enabled interfaces.

ipv6 pim ssm range

To configure IPv6 Protocol Independent Multicast (PIM6) group ranges for Source Specific Multicast (SSM), use the **ipv6 pim ssm range** command. To reset the SSM group range to the default, use the **no** form of this command with the **none** keyword.

ipv6 pim ssm {**range** {*groups* | **none**] | **route-map** *policy-name*}

no ipv6 pim ssm {**range** [*groups* | **none**] | **route-map** *policy-name*}

Syntax Description

groups	List of up to four group range prefixes.
none	Removes all group ranges.
route-map *policy-name*	Specifies the route-map policy name.

Defaults

The SSM range is FF3x/96.

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Keyword **none** was added.
4.2(1)	Added the keyword **route-map** and argument *policy-name*.

Usage Guidelines

The **match ipv6 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 ipv6 multicast** command.

This command requires the Enterprise Services license.

Examples

This example shows how to configure a PIM6 group range for SSM:

```
switch(config)# ipv6 pim ssm range FF30::0/32
```

This example shows how to reset the group range to the default:

```
switch(config)# no ipv6 pim ssm range none
```

This example shows how to remove all group ranges:

```
switch(config)# ipv6 pim ssm range none
```

Related Commands

Command	Description
show ipv6 pim group-range	Displays information about PIM6 group ranges.

ipv6 pim state-limit

To configure a maximum number of IPv6 Protocol Independent Multicast (PIM6) state entries in the current virtual routing and forwarding (VRF) instance, use the **ipv6 pim state-limit** command. To remove the limit on state entries, use the **no** form of this command.

ipv6 pim state-limit *max-states* [**reserved** *policy-name max-reserved*]

no ipv6 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 4294967295. 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.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	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 Enterprise 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)# ipv6 pim state-limit 100000 reserved my_reserved_policy 40000
```

This example shows how to remove the limits on state entries:

```
switch(config)# no ipv6 pim state-limit
```

Related Commands

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

ipv6 pim use-shared-tree-only

To create IPv6 Protocol Independent Multicast (PIM6) (*, G) state only (where no source state is created), use the **ipv6 pim use-shared-tree-only** command. To remove the creation of shared tree state only, use the **no** form of this command.

ipv6 pim use-shared-tree-only group-list *policy-name*

no ipv6 pim use-shared-tree-only [**group-list** *policy-name*]

Syntax Description

policy-name	Route-map policy name that defines the group prefixes where this feature is applied.

Defaults

None

Command Modes

Global configuration (config)
VRF configuration (config-vrf)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Keyword **group-list** was added and a route-map policy name is used to define groups.

Usage Guidelines

You can use the **match ipv6 multicast** command in a route-map policy to specify the groups where shared trees should be enforced.

This command requires the Enterprise Services license.

Examples

This example shows how to create the PIM6 (*, G) state only for the group prefixes defined in my_group_policy:

```
switch(config)# ipv6 pim use-shared-tree-only group-list my_group_policy
```

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

```
switch(config)# no ipv6 pim use-shared-tree-only
```

Related Commands

Command	Description
show ipv6 pim rp	Displays information about PIM6 RPs.

ipv6 routing multicast event-history

To configure the size of the IPv6 Multicast Routing Information Base (M6RIB) event history buffers, use the **ipv6 routing multicast event-history** command. To revert to the default buffer size, use the **no** form of this command.

ipv6 routing multicast event-history {**cli** | **mfdm-debugs** | **mfdm-events** | **mfdm-stats** | **rib** | **vrf**} **size** *buffer-size*

no ipv6 routing multicast event-history {**cli** | **mfdm-debugs** | **mfdm-stats** | **rib** | **vrf**} **size** *buffer-size*

Syntax Description

cli	Configures the CLI event history buffer.
mfdm-debugs	Configures the multicast FIB distribution (MFDM) event history buffer.
mfdm-events	Configures the multicast FIB distribution (MFDM) non-periodic events event history buffer.
mfdm-stats	Configures the MFDM sum event history buffer.
rib	Configures the RIB event history buffer.
vrf	Configures the virtual routing and forwarding (VRF) event history buffer.
size	Specifies the size of the buffer to allocate.
buffer-size	Buffer size is one of the following values: **disabled**, **large**, **medium**, or **small**. The default buffer size is **small**.

Defaults

All history buffers are allocated as small.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.
4.2(1)	Added the keyword **mfdm-events**. Changed the keyword **mfdm** to **mfdm-debugs**.

Usage Guidelines

To display configured buffer sizes, use this command line:

```
switch(config)# show running-config | include "ipv6 routing"
```

This command does not require a license.

Examples

This example shows how to configure the size of the M6RIB MFDM event history buffer:

```
switch(config)# ipv6 routing multicast event-history mfdm size large
switch(config)#
```

Related Commands

Command	Description
clear ipv6 routing multicast event-history	Clears information in the IPv6 M6RIB event history buffers.
show routing ipv6 multicast event-history	Displays information in the IPv6 M6RIB event history buffers.
show running-config	Displays information about the running-system configuration.

ipv6 routing multicast holddown

To configure the IPv6 multicast routing initial holddown period, use the **ipv6 routing multicast holddown** command. To revert to the default holddown period, use the **no** form of this command.

ipv6 routing multicast holddown *holddown-period*

no ipv6 routing multicast holddown *holddown-period*

Syntax Description

holddown-period	Initial route holddown period in seconds. The range is from 90 to 210. Specify 0 to disable the holddown period. The default is 210.

Defaults

The holddown period is 210 seconds.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

To display the holddown period configuration, use this command line:

```
switch(config)# show running-config | include "ipv6 routing multicast holddown"
```

This command does not require a license.

Examples

This example shows how to configure the routing holddown period:

```
switch(config)# ipv6 routing multicast holddown 100
switch(config)#
```

Related Commands

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

ipv6 routing multicast software-replicate

To enable software replication of IPv6 Protocol Independent Multicast (PIM) Any Source Multicast (ASM) packets that are leaked to the software for state creation, use the **ipv6 routing multicast software-replicate** command. To reset to the default, use the **no** form of this command.

ipv6 routing multicast software-replicate

no ipv6 routing multicast software-replicate

Syntax Description

This command has no arguments or keywords.

Defaults

No software replication.

Command Modes

Global configuration (config)

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.2(3)	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.

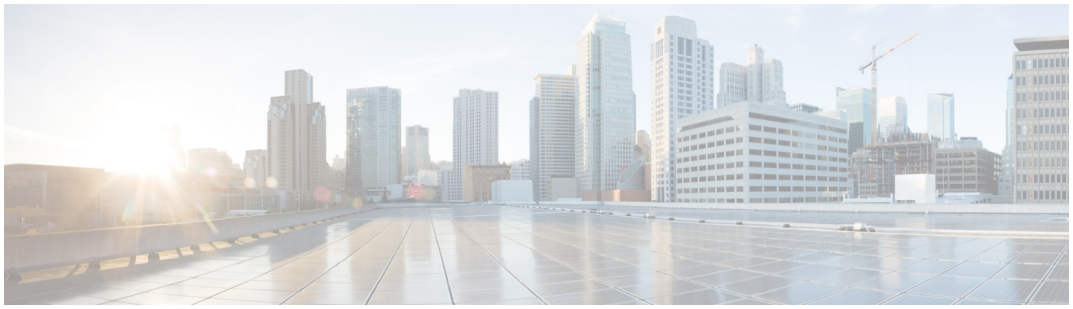
Examples

This example shows how to enable software replication of IPv6 PIM ASM packets:

```
switch(config)# ipv6 routing multicast software-replicate
switch(config)#
```

Related Commands

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



I Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with L.

layer-2 multicast lookup mac (Global configuration mode)

To enable lookup type, use the **layer-2 multicast lookup mac** command. To disable this command use the **no** form of this command.

layer-2 multicast lookup mac

no layer-2 multicast lookup mac

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to enable lookup type:

```
switch(config)# layer-2 multicast lookup mac
switch(config)#
```

This example shows how to disable lookup type:

```
switch(config)# no layer-2 multicast lookup mac
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.

layer-2 multicast lookup mac (VLAN configuration mode)

To enable lookup type, use the **layer-2 multicast lookup mac** command. To disable this command use the **no** form of this command.

layer-2 multicast lookup mac

no layer-2 multicast lookup mac

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

VLAN configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

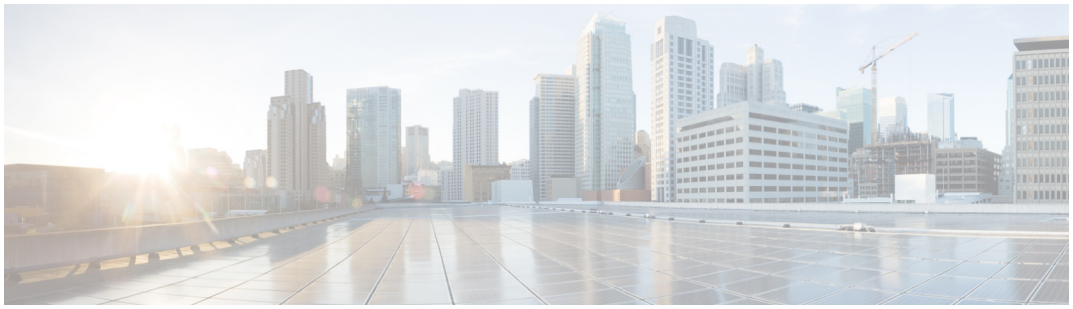
Examples

This example shows how to enable lookup type:

```
switch(config-vlan)# layer-2 multicast lookup mac
switch(config)#
```

Related Commands

show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.



M Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with M.

mac address-table multicast

To configure an outgoing interface statically for a multicast MAC address, use the **mac address-table multicast** command.

mac address-table multicast *multicast-mac-address* **vlan** *vlan-id* **interface** *interface-name*

Syntax Description

multicast-mac-address	Specifies multicast MAC address.
vlan	Specifies the VLAN.
vlan-id	VLAN ID. The range is from 1 to 3967 and from 4048 to 4093.
interface	Specifies the interface.
interface-name	Interface name.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

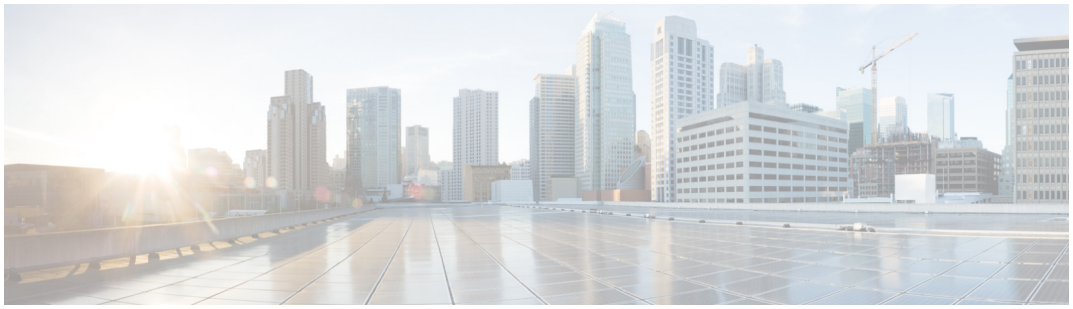
Examples

This example shows how to configure the specified outgoing interface statically for a multicast MAC address:

```
switch(config)# mac address-table multicast 01:00:5f:00:00:00 vlan 5 interface ethernet
2/5
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping mac-oif	Displays the IGMP snooping static MAC information.



R Commands

This chapter describes the Cisco NX-OS multicast routing commands that begin with R.

restart igmp

To restart the IGMP process, use the **restart igmp** command.

restart igmp

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to restart the process:

```
switch(config)# restart igmp
```

Related Commands

Command	Description
ip igmp flush-routes	Enables flushing routes when the IGMP process is restarted.

restart msdp

To restart the Multicast Source Discovery Protocol (MSDP) process, use the **restart msdp** command.

restart msdp

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to restart the MSDP process:

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

Related Commands

Command	Description
ip msdp flush-routes	Enables flushing routes when the MSDP process is restarted.

restart pim

To restart the IPv4 Protocol Independent Multicast (PIM) process, use the **restart pim** command.

restart pim

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to restart the PIM process:

```
switch(config)# restart pim
```

Related Commands

Command	Description
ip pim flush-routes	Enables flushing routes when the PIM process is restarted.

restart pim6

To restart the IPv6 Protocol Independent Multicast (PIM6) process, use the **restart pim6** command.

restart pim6

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

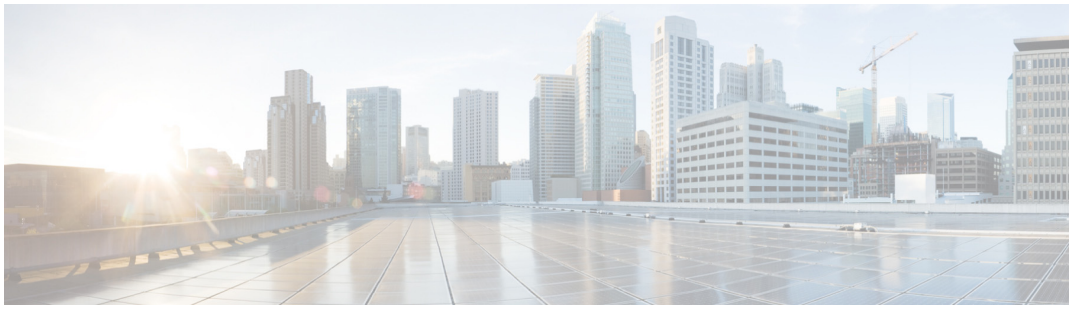
Examples

This example shows how to restart the PIM6 process:

```
switch(config)# restart pim6
```

Related Commands

Command	Description
ipv6 pim flush-routes	Enables flushing routes when the PIM6 process is restarted.



Show Commands

This chapter describes the Cisco NX-OS multicast routing **show** commands.

show forwarding distribution ip igmp snooping

To display information about Layer 2 IGMP snooping multicast 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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
Vlan: 1, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 5
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0

Vlan: 3, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 5
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0
```

```
Vlan: 13, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 5
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0

Vlan: 200, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 5
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0

Vlan: 1001, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 5
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0
```

show forwarding distribution ipv6 multicast route

To display information about the multicast IPv6 FIB routes, use the **show forwarding distribution ipv6 multicast route** command.

show forwarding distribution ipv6 multicast route [**table** *table_id* | **vrf** *vrf-name*] [*group* [*source*] | **summary**]

Syntax Description

table *table_id*	(Optional) Specifies a table ID. The range is from 0x0 to 0xffffffff.
vrf *vrf-name*	(Optional) Specifies a virtual routing and forwarding (VRF) name.
group	(Optional) IPv6 group address.
source	(Optional) IPv6 source address.
summary	(Optional) Specifies route counts.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the multicast IPv6 FIB routes:

```
switch(config)# show forwarding distribution ipv6 multicast route

IPv6 Multicast Routing table table-id:0x80000001
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

  (*, ff00::/8), RPF Interface: NULL, flags: D
```

```
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff01::/16), RPF Interface: NULL, flags: D
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff02::/16), RPF Interface: NULL, flags: CP
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff11::/16), RPF Interface: NULL, flags: D
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff12::/16), RPF Interface: NULL, flags: CP
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List
switch#
```

show forwarding distribution l2 multicast vlan

To display platform independent database in Layer 2 multicast, use the **show forwarding distribution l2 multicast vlan** command.

show forwarding distribution l2 multicast [**vlan** *vlan-id* [{**group** *grpaddr* [**source** *srcaddr*]} | **destination-mac** *dmac*]]

Syntax Description

vlan-id	(Optional) VLAN ID. The range is from 1 to 3967 and from 4048 to 4093.
group	(Optional) Displays the group specific information.
grpaddr	(Optional) Group address.
source	(Optional) Displays the (G,S) specific information.
srcaddr	(Optional) Source address.
destination-mac	(Optional) Displays the destination MAC specific information
dmac	(Optional) Destination MAC address.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

If the VLAN is configured for MAC based lookup, then the display will show MAC entries, else it will show IP entries.

User can explicitly display an IP (BD,S,G) entry or MAC entry by specifying Group address or MAC address. If the lookup mode is IP and the user specifies MAC, show will return null and prints a message “Snooping lookups in group IP mode”. Similarly If the user specifies MAC and the lookup is IP, show command will return null and prints “Snooping lookups in group MAC mode”

This command does not require a license.

Examples

This example shows how to display platform independent database information for a specific VLAN:

```
switch# show forwarding distribution l2 multicast vlan 1
Vlan: 1, Group: 0.0.0.0, Source: 0.0.0.0
```

```
Outgoing Interface List Index: 65535
Reference Count: 1
Platform Index: 0x0
Number of Outgoing Interfaces: 0
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding distribution multicast

To display information about multicast distribution messages, use the **show forwarding distribution multicast** command.

show forwarding distribution multicast [**messages**]

Syntax Description

messages	(Optional) Displays message information.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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: 2
Slot     FIB State
   2        ACTIVE
   7        ACTIVE
switch#
```

show forwarding distribution multicast client

To display information about the multicast 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show forwarding distribution multicast client

Number of Clients Registered: 3
Client-name  Client-id  Shared Memory Name
m6rib        1          m6rib-mfdm
mrib         2          mrib-mfdm
igmp         3          N/A
switch#
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding distribution multicast outgoing-interface-list

To display information about the multicast 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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(config)# show forwarding distribution multicast outgoing-interface-list L3

  Outgoing Interface List Index: 1
  Reference Count: 1
  Platform Index: 0x7ffe
  Number of Outgoing Interfaces: 1
    mgmt0
switch#
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding distribution multicast route

To display information about the multicast 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.
group	(Optional) Specifies 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 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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: 4
Legend:
   C = Control Route
   D = Drop Route
   G = Local Group (directly connected receivers)
   O = Drop on RPF Fail
   P = Punt to supervisor

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

  (*, 224.0.0.0/24), RPF Interface: NULL, flags: CP
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, 224.0.1.39/32), RPF Interface: NULL, flags: CP
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, 224.0.1.40/32), RPF Interface: NULL, flags: CP
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List
switch#
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding ipv6 multicast route

To display information about the IPv6 multicast routes, use the **show forwarding ipv6 multicast route** command.

show forwarding [**vrf** {*vrf-name* | **all**}] **ipv6 multicast route** {[**group** {*group* | *group-addr*} | **source** {*source* | *source-addr*} | **module** *num* | **vrf** {*vrf-name* | **all**}] | **summary** [**module** *num* | **vrf** {*vrf-name* | **all**}]}

Syntax Description

vrf	(Optional) Displays routes for a specific virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Displays information for all VRFs.
group	(Optional) Specifies multicast IPv6 group address.
group	Multicast IPv6 group address with prefix.
group-addr	Multicast IPv6 group address.
source	Specifies multicast IPv6 source address.
source	Multicast IPv6 source address with prefix.
source-addr	Multicast IPv6 source address.
module *num*	(Optional) Specifies module number.
summary	Displays route counts.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Added the *group-addr* and *source-addr* arguments.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the IPv6 multicast routes:

```
switch(config)# show forwarding ipv6 multicast route

IPv6 Multicast Routing table table-id:0x80000001
Total number of groups: 0
Legend:
   C = Control Route
   D = Drop Route
   G = Local Group (directly connected receivers)
   O = Drop on RPF failure
   P = Punt to Supervisor

  (*, ff00::/8), RPF Interface: NULL, flags: DW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff01::/16), RPF Interface: NULL, flags: DW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff02::/16), RPF Interface: NULL, flags: CPW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff11::/16), RPF Interface: NULL, flags: DW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, ff12::/16), RPF Interface: NULL, flags: CPW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List
switch(config)#
```

show forwarding l2 multicast vlan

To display platform independent database in Layer 2 multicast with MFDM information, use the **show forwarding distribution l2 multicast vlan** command.

show forwarding l2 multicast [**vlan** *vlan-id* [{**source** *source-ip* **group** *group-ip*]} | **destination-mac** *dmac*]] [**module** *number*]

Syntax Description

vlan-id	(Optional) VLAN ID. The range is from 1 to 3967 and from 4048 to 4093.
group	(Optional) Displays the group specific information.
grpaddr	(Optional) Group address.
source	(Optional) Displays the (G,S) specific information.
srcaddr	(Optional) Source address.
destination-mac	(Optional) Displays the destination MAC specific information
dmac	(Optional) Destination MAC address.
module	(Optional) Module
number	(Optional) Slot number. The range is from 0 to 18.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

This command is same as **show forwarding distribution l2 multicast vlan** command but it displays MFDM information. If the VLAN is configured for MAC based lookup, then the display will show MAC entries, else it will show IP entries.

User can explicitly display an IP (BD,S,G) entry or MAC entry by specifying Group address or MAC address. If the lookup mode is IP and the user specifies MAC, show will return null and prints a message “Snooping lookups in group IP mode”. Similarly If the user specifies MAC and the lookup is IP, show command will return null and prints “Snooping lookups in group MAC mode”

This command does not require a license.

Examples

This example shows how to display platform independent database information for a specific VLAN with MFDM information:

```
switch# show forwarding l2 multicast vlan 1
Vlan: 1, Group: 0.0.0.0, Source: 0.0.0.0
  Outgoing Interface List Index: 65535
  Reference Count: 1
  Platform Index: 0x0
  Number of Outgoing Interfaces: 0
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding multicast outgoing-interface-list

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

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

Syntax Description

module *num*	(Optional) Specifies the module number.
index	(Optional) OIF list index.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about the multicast outgoing interface (OIF) list:

```
switch(config)# show forwarding multicast outgoing-interface-list

  Outgoing Interface List Index: 65535
  Reference Count: 9
switch(config)#
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show forwarding multicast route

To display information about the IPv4 multicast routes, use the **show forwarding 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** [**module** *num* | **vrf** {*vrf-name* | **all**}]}

Syntax Description

vrf	(Optional) Displays information for a specified virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Displays information for all VRFs.
ip	(Optional) Specifies IPv4.
ipv4	(Optional) Specifies IPv4.
group	(Optional) Specifies 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 IPv4 multicast source address.
source-addr	IPv4 multicast source address.
source-mask	(Optional) IPv4 multicast source address mask.
source-prefix	(Optional) IPv4 multicast source prefix.
module *num*	(Optional) Specifies the module number.
summary	Displays route counts.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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 routes:

```
switch(config)# show forwarding multicast route
IPv4 Multicast Routing table table-id:1
Total number of groups: 0
Legend:
   C = Control Route
   D = Drop Route
   G = Local Group (directly connected receivers)
   O = Drop on RPF failure
   P = Punt to Supervisor
   W = Wildcard

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

  (*, 224.0.0.0/24), RPF Interface: NULL, flags: CPW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, 224.0.1.39/32), RPF Interface: NULL, flags: CPW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List

  (*, 224.0.1.40/32), RPF Interface: NULL, flags: CPW
    Received Packets: 0 Bytes: 0
    Number of Outgoing Interfaces: 0
    Null Outgoing Interface List
```

Related Commands

Command	Description
show forwarding distribution multicast	Displays the information about multicast distribution messages.

show ip igmp event-history

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

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

Syntax Description

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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
1) Event:E_DEBUG, length:44, at 423337 usecs after Mon Dec 22 12:24:49 2008
```

```
    [121] : Updated entry in Route count database
2) Event:E_DEBUG, length:45, at 423072 usecs after Mon Dec 22 12:24:49 2008
    [121] : Updating entry in Route count database
3) Event:E_DEBUG, length:49, at 943183 usecs after Mon Dec 22 12:24:41 2008
    [121] : Recovered all route count entries from PSS
4) Event:E_DEBUG, length:38, at 943133 usecs after Mon Dec 22 12:24:41 2008
    [121] : Recovering Route count database
5) Event:E_DEBUG, length:55, at 943124 usecs after Mon Dec 22 12:24:41 2008
    [121] : Attempting IGMP SNOOP database stateful recovery
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.

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*]}] [*if-type if-number*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

source	Source IP address.
group	(Optional) Multicast IP address of the single group to display.
if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	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
IGMP Connected Group Membership for Context "default" - 2 total entries
Type: S - Static, D - Dynamic, L - Local, T - SSM Translated
Group Address      Type Interface            Uptime    Expires   Last Reporter
224.1.1.1          L    GigabitEthernet2/8   00:00:04  00:04:15  1.0.8.3
```

```
224.1.1.2          L    GigabitEthernet2/8   00:00:02  00:04:17  1.0.8.3
switch(config)#
```

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 *if-type if-number*

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

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.
brief	(Optional) Displays one line status per interface.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Changed output to include vPC information when IGMP is in vPC mode.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp interface vlan 5
IGMP Interfaces for VRF "default"
Vlan5, Interface status: protocol-up/link-up/admin-up
  IP address: 2.4.0.4, IP subnet: 2.4.0.0/24
  Active querier: 2.4.0.4, version: 2, next query sent in: 00:01:02
  Membership count: 0
  Old Membership count 0
  IGMP version: 2, host version: 2
```

```
  IGMP query interval: 125 secs, configured value: 125 secs
  IGMP max response time: 10 secs, configured value: 10 secs
  IGMP startup query interval: 31 secs, configured value: 31 secs
  IGMP startup query count: 2
  IGMP last member mrt: 1 secs
  IGMP last member query count: 2
  IGMP group timeout: 260 secs, configured value: 260 secs
  IGMP querier timeout: 255 secs, configured value: 255 secs
  IGMP unsolicited report interval: 10 secs
  IGMP robustness variable: 2, configured value: 2
  IGMP reporting for link-local groups: disabled
  IGMP interface enable refcount: 1
  IGMP Report Policy: None
  IGMP State Limit: None
  IGMP interface statistics:
    General (sent/received):
      v1-reports: 0/0
      v2-queries: 574/574, v2-reports: 0/3, v2-leaves: 0/3
      v3-queries: 0/0, v3-reports: 0/0
    Errors:
      Checksum errors: 0, Packet length errors: 0
      Packets with Local IP as source: 2, Source subnet check failures: 0
      Query from non-querier:0
      Report version mismatch: 0, Query version mismatch: 0
      Unknown IGMP message type: 0
      Invalid v1 reports: 0, Invalid v2 reports: 0, Invalid v3 reports: 0
    Packets dropped due to router-alert check: 0
  Interface PIM DR: vPC Peer
  Interface vPC CFS statistics:
    DR queries sent: 2
    DR queries rcvd: 0
    DR queries fail: 0
    DR updates sent: 4
    DR updates rcvd: 0
    DR updates fail: 0
switch(config)#
```

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

```
switch(config)# show ip igmp interface brief
IGMP Interfaces for VRF "default", count: 2
Interface            IP Address      IGMP Querier    Membership  Version
                                                     Count
Ethernet2/11         192.168.1.222   0.0.0.0         0           v2
Ethernet2/12         unassigned      0.0.0.0         0           v2
switch(config)#
```

Related Commands

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

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 [*if-type if-number*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp local-groups
IGMP Locally Joined Group Membership for VRF "default"
Group Address    Source Address   Type     Interface   Last Reported
230.0.0.0        *                Static   Eth2/11     4d04h
224.0.1.39       *                Local    Eth2/11     4d04h
224.0.1.40       *                Local    Eth2/11     4d04h
switch(config)#
```

Related Commands

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

show ip igmp

To display IGMP status and configuration, use the **show ip igmp** command.

show ip igmp {**groups** | **route**} [{*source* [*group*]} | {*group* [*source*]}] [*interface*] [**summary**] [**vrf** {*vrf-name* | *vrf-known-name* | **all**}]

Syntax Description

groups	Displays IGMP attached group membership information.
route	Displays IGMP attached group membership information.
source	Source IP address.
group	(Optional) Multicast IP address of single group to display.
interface	Displays port channel interface.
summary	Displays group summary.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
6.1(1)	changed the position of the **summary** option in the **show ip igmp groups** and **show ip igmp route** set of commands (The **summary** option used to be after the **vrf** option and now it will be precede it).
4.0(1)	This command was introduced.

Usage Guidelines

The **show ip igmp groups** command is an alternative form of this command.

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp route
IGMP Connected Group Membership for Context "default" - 2 total entries
Type: S - Static, D - Dynamic, L - Local, T - SSM Translated
Group Address      Type Interface            Uptime    Expires   Last Reporter
224.1.1.1          L    GigabitEthernet2/8   00:00:04  00:04:15  1.0.8.3
224.1.1.2          L    GigabitEthernet2/8   00:00:02  00:04:17  1.0.8.3
switch(config)#
```

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.

Defaults

Displays all VLANs.

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp snooping vlan 1
IGMP Snooping information for vlan 1
  IGMP snooping enabled
  IGMP querier none
  Switch-querier disabled
  Explicit tracking enabled
  Fast leave enabled
  Report suppression enabled
  Router port detection using PIM Hellos, IGMP Queries
  Number of router-ports: 0
  Number of groups: 0
switch(config)#
```

Related Commands

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

show ip igmp snooping event-history

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

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

Syntax Description

vpc	Displays the event history buffer of type virtual port channel (vPC).
igmp-snoop-internal	Displays the event history buffer of type IGMP snooping internal.
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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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(config)# show ip igmp snooping event-history vlan

 vlan Events for IGMP snoopprocess
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 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(2)	This command was changed to make the **vlan** argument optional.

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(config)# show ip igmp snooping explicit-tracking vlan 33
IGMPv3 Snooping Explicit-tracking information
Source/Group            Intf      Reporter        Uptime    Last-Join Expires
1.1.1.1 232.1.1.1       Eth2/1    3.3.3.3         00:01:33  00:04:27  00:01:44
switch(config)#
```

show ip igmp snooping groups

To display information about 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Arguments *source* and *group* were added.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp snooping groups
Type: S - Static, D - Dynamic, R - Router port

Vlan  Group Address      Ver  Type  Port list
33    225.1.1.1          v3   S     Eth2/1
switch(config)#
```

show ip igmp snooping look-up mode

To display IGMP snooping lookup mode information, use the **show ip igmp snooping lookup-mode** command.

show ip igmp snooping look-up mode [**vlan** *vlan-id*]

Syntax Description

vlan	(Optional) Displays the VLAN information.
vlan-id	(Optional) VLAN ID. The range is from 1 to 3967 and from 4048 to 4093.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

If the VLAN is configured for MAC based lookup, then the display will show MAC entries, else it will show IP entries.

User can explicitly display an IP (BD,S,G) entry or MAC entry by specifying Group address or MAC address. If the lookup mode is IP and the user specifies MAC, show will return null and prints a message “Snooping lookups in group IP mode”. Similarly If the user specifies MAC and the lookup is IP, show command will return null and prints “Snooping lookups in group MAC mode”

This command does not require a license.

Examples

This example shows how to display IGMP snooping lookup mode information:

```
switch(config)# show ip igmp snooping lookup-mode vlan 1
Global lookup-mode:
  configured : IP
  operational: MAC
VLAN lookup-mode
   1 IP
  10 MAC
  11 IP
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping mac-oif	Displays the IGMP Snooping static MAC OIF information.

show ip igmp snooping mac-oif

To display IGMP Snooping static MAC OIF information, use the **show ip igmp snooping mac-oif** command.

show ip igmp snooping mac-oif [**vlan** *vlan-id*] [***detail***]

Syntax Description

detail	(Optional) Displays the detail static MAC OIF, M2RIB OIF information.
vlan	(Optional) Displays VLAN information.
vlan-id	(Optional) VLAN ID. The range is from 1 to 3967 and from 4048 to 4093.

Defaults

None

Command Modes

Global configuration mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display IGMP snooping MAC OIF information:

```
switch(config)# show ip igmp snooping mac-oif
Total Mac OIF: 0
VLAN Count MAC-ADDR        OIFs
   1     0
switch(config)#
```

This example shows how to display detailed IGMP snooping MAC OIF and M2RIB OIF information:

```
switch(config)# show ip igmp snooping mac-oif detail
Total Mac OIF: 0
VLAN Count MAC-ADDR        OIFs
   1     0
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Changed output to include vPC information.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp snooping mrouter
Type: S - Static, D - Dynamic, V - vPC Peer Link
Vlan  Router-port   Type     Uptime      Expires
1     Po88          SV       00:00:51    never
2     Po88          SV       00:00:51    never
3     Po88          SV       00:00:51    never
4     Po88          SV       00:00:51    never
5     Vlan5           D      18:02:38    00:04:40
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip igmp snooping querier
Vlan  IP Address       Version   Port
1     172.20.50.11     v3        fa2/1
2     172.20.40.20     v2        Router
switch(config)#
```

Related Commands

Command	Description
show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Changed output to include vPC information.
4.2(1)	Enhanced output for vPC information.
4.2(2)	Changed command to make the **vlan** argument optional and to introduce the optional **global** argument.

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
Global IGMP snooping statistics:
Packets received: 78
  Packet errors: 0
  Packets for non-snooped vlans : 0
  Packets flooded: 41
  vPC PIM DR queries sent: 0
  vPC PIM DR queries rcvd: 0
  vPC PIM DR queries fail: 0
  vPC PIM DR updates sent: 4
  vPC PIM DR updates rcvd: 0
```

```
  vPC PIM DR updates fail: 0
  vPC CFS send fail: 0
  vPC CFS message response sent: 13
  vPC CFS message response rcvd: 16
  vPC CFS message response fail: 0
  vPC CFS message response fail peer-link down: 0
  vPC CFS unreliable message sent: 35
  vPC CFS unreliable message rcvd: 37
  vPC CFS unreliable message fail: 0
  vPC CFS reliable message sent: 16
  vPC CFS reliable message rcvd: 13
  vPC CFS reliable message fail: 0
  STP TCN messages rcvd: 22
  IM api failed: 0
VLAN 2 IGMP snooping statistics, last reset: never
  Packets received: 29
  IGMPv1 reports received: 0
  IGMPv2 reports received: 13
  IGMPv3 reports received: 0
  IGMPv1 queries received: 0
  IGMPv2 queries received: 14
  IGMPv3 queries received: 0
  IGMPv2 leaves received: 0
  PIM Hellos received: 0
  Invalid reports received: 0
  Invalid queries received: 0
  IGMPv1 reports suppressed: 0
  IGMPv2 reports suppressed: 0
  IGMPv2 leaves suppressed: 0
  IGMPv3 group records suppressed: 0
  Queries originated: 0
  IGMPv2 proxy-reports originated: 0
  IGMPv2 proxy-leaves originated: 0
  IGMPv3 proxy-reports originated: 0
  Packets sent to routers: 13
  STP TCN received: 9
  Report version mismatch: 0
  Unknown packets received: 0
  vPC Peer Link CFS packet statistics:
      IGMP packets (sent/recv/fail): 11/16/0
      MRD updates (sent/recv/fail): 0/0/0
```

Related Commands

Command	Description
show ip igmp snooping lookup-mode	Displays the IGMP snooping lookup mode information.

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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about multicast routes:

```
switch(config)# show ip mroute
IP Multicast Routing Table for VRF "default"

(*, 224.1.1.1/32), uptime: 13:00:28, igmp ip pim
  Incoming interface: Loopback1 (iod: 3), RPF nbr: 2.2.2.2
  Outgoing interface list: (count: 1)
    GigEther2/0/1 (iod 4), uptime: 13:00:28, igmp

(*, 226.1.1.1/32), uptime: 13:00:32, igmp ip pim
  Incoming interface: Loopback1 (iod: 3), RPF nbr: 2.2.2.2
```

```
  Outgoing interface list: (count: 1)
    GigEther2/0/1 (iod 4), uptime: 13:00:32, igmp

(*, 228.2.2.2/32), uptime: 13:00:27, igmp ip pim
  Incoming interface: Loopback1 (iod: 3), RPF nbr: 2.2.2.2
  Outgoing interface list: (count: 1)
    GigEther2/0/1 (iod 4), uptime: 13:00:27, igmp

(*, 232.0.0.0/8), uptime: 13:01:27, pim ip
  Incoming interface: Null (iod: 0), RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

switch(config)#
```

The display specifies the interface established for each one and shows the router owners. In the case of the first paragraph in the display, the route owner is **igmp ip pim**. **iod** is an internal representation the device uses for the interface.

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.
all	Specifies all VRFs.
group	Specifies a group address for a route.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ip mroute summary
IP Multicast Routing Table for VRF "default"

Total number of routes: 6
Total number of (*,G) routes: 4
Total number of (S,G) routes: 1
Total number of (*,G-prefix) routes: 1
Group count: 4, rough average sources per group: 0.2
```

```
Group: 225.0.0.1/32, Source count: 0
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     1

Group: 225.0.1.1/32, Source count: 0
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     1

Group: 225.1.1.1/32, Source count: 1
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     4
2.1.1.2           0             0               0     0         0 bps     4

Group: 226.1.1.1/32, Source count: 0
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     1

Group: 232.0.0.0/8, Source count: 0
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     0
0 bps     0
switch(config)#
```

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 systems (AS) number.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display MSDP counts:

```
switch(config)# show ip msdp count
    SA State per ASN, context "default" - 2134 total entries
      <asn>: <(S,G) count>/<group count>
       3:     5/4         8:     4/4         9:     7/6        12:     1/1
      14:    18/14       17:     4/3        18:    11/3        25:   331/290
      26:    10/6        27:     1/1        32:     4/4        38:     8/5
      52:    11/2        55:    13/2        59:    12/9        70:     6/4
      73:    10/10       81:    30/13       87:     1/1       103:    11/10
     109:    46/23      111:     1/1       131:    21/3       137:     8/8
     159:     9/6       160:     2/2       194:     2/1       195:     2/1
     217:     1/1       224:    24/13      225:     1/1       237:    38/31
     271:     8/7       291:     1/1       292:     2/2       293:     5/4
     297:     6/6       549:     3/2       553:     1/1       559:    23/18
     668:     2/1       680:    26/21      683:    16/10      704:    18/15
     766:    18/17      776:     2/2       786:   123/49      818:     2/2
    1103:    46/37     1161:     2/2      1224:    10/8      1239:     9/9
```

```
   1273:     1/1      1312:     1/1      1657:     6/6      1706:     7/6
   1725:     1/1      1739:     3/3      1741:    11/11     1742:     6/5
   1835:     1/1      1851:     2/1      1935:     1/1      1998:     6/6
   2055:     7/6      2107:     2/2      2152:     7/5      2200:    46/29
   2259:   168/4      2381:     8/4      2422:     5/5      2594:    25/25
   2607:    64/59     2611:    45/37     2637:     5/4      2701:     1/1
   2852:   117/16     2914:     2/2      3323:     2/2      3582:    27/24
   3676:     7/3      3685:     9/8      3851:     1/1      3912:     5/3
   3948:     1/1      3999:     6/4      4130:     4/4      4201:     5/4
   4385:     9/5      5050:     1/1      5408:     4/3      5520:     3/3
   5640:    26/6      5661:    14/10     5664:     3/3      5719:     2/2
   5739:     1/1      6192:     5/2      6200:     2/2      6263:     8/5
   6360:     3/1      6366:     8/6      6481:    15/12     6509:    31/9
   7082:     4/1      7212:     4/3      7377:    10/9      7539:    63/37
   7570:     3/3      7571:     1/1      7572:     1/1      7575:    20/11
   7610:     1/1      7660:     1/1      7774:     2/1      7896:     2/2
   8071:     5/3      8111:    22/22     9112:     5/2      9270:     2/1
   9821:     1/1     10546:     2/2     10764:     1/1     10886:     2/2
  11050:     2/2     11078:     2/1     11279:    13/3     11537:     8/3
  11546:     1/1     11808:     1/1     12005:     2/2     12173:     1/1
  13476:     1/1     13501:     5/4     14077:     3/3     15474:     1/1
  15725:     1/1     16430:     2/1     16517:     2/2     17055:     3/2
  18047:    14/14    18062:   111/41    18297:     2/2     20965:    24/1
  22168:     2/2     23366:     6/2     23504:     5/1     23719:    11/8
  24433:     6/3     24434:     5/2     24437:     1/1     25656:     1/1
  25689:     3/3     26002:     5/3     26367:     1/1     26934:     3/3
  26971:     1/1     29825:     1/1     32666:     5/5     65028:     1/1
switch(config)#
```

Related Commands

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

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

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

Msg events for MSDP Process
1) Event:E_DEBUG, length:38, at 198828 usecs after Wed Jan  7 17:24:45 2009
    [100] : nvdb: transient thread created

2) Event:E_DEBUG, length:38, at 197333 usecs after Wed Jan  7 17:24:45 2009
    [100] : nvdb: create transcient thread

3) Event:E_DEBUG, length:77, at 197327 usecs after Wed Jan  7 17:24:45 2009
    [100] : comp-mts-rx opc - from sap 27315 cmd msdp_show_internal_event_hist_cmd
4) Event:E_DEBUG, length:35, at 277809 usecs after Wed Jan  7 17:24:40 2009
    [100] : nvdb: terminate transaction

5) Event:E_DEBUG, length:60, at 277696 usecs after Wed Jan  7 17:24:40 2009
    [100] : nvdb: msdp_show_internal_event_hist_cmd returned 0x0
```

```
6) Event:E_DEBUG, length:38, at 277243 usecs after Wed Jan  7 17:24:40 2009
    [100] : nvdb: transient thread created

7) Event:E_DEBUG, length:38, at 275631 usecs after Wed Jan  7 17:24:40 2009
    [100] : nvdb: create transcient thread

8) Event:E_DEBUG, length:77, at 275625 usecs after Wed Jan  7 17:24:40 2009
    [100] : comp-mts-rx opc - from sap 27315 cmd msdp_show_internal_event_hist_cmd
9) Event:E_DEBUG, length:47, at 93136 usecs after Wed Jan  7 17:24:32 2009
    [100] : nvdb: _cli_send_my_command returned 0x0
switch(config)#
```

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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about MSDP mesh groups:

```
switch(config)# show ip msdp mesh-group
MSDP Mesh-Group Membership for VRF "default"
Mesh-group: my_mesh_group
  Peer: 192.168.1.10, AS: 8, description: engineering peer
```

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 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about MSDP peers:

```
switch(config)# show ip msdp peer
MSDP peer 192.168.1.10 for VRF "default"
AS 8, local address: 192.168.1.222 (Ethernet2/11)
  Description: engineering peer
  Connection status: Listening
    Uptime(Downtime): 01:14:30
    Last reset reason: Connect source interface address changed
    Password: not set
  Keepalive Interval: 10 sec
  Keepalive Timeout: 20 sec
  Reconnection Interval: 20 sec
  Policies:
    SA in: my_incoming_sa_policy, SA out: none
    SA limit: unlimited
  Member of mesh-group: my_mesh_group
  Statistics (in/out):
```

```
    Last messaged received: never
    SAs: 0/0, SA-Requests: 0/0, SA-Responses: 0/0
    Keepalives: 0/0, Notifications: 0/0
switch(config)#
```

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 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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
C: No. of comparisions, M: No. of matches

route-map rmap1 permit 10
  match ip multicast group 225.1.1.0/24                    C: 0      M: 0

Total accept count for policy: 12
Total reject count for policy: 21
switch(config)#
```

Related Commands

Command	Description
clear ip msdp route	Clears routes in the MSDP Source-Active cache.

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) 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **show ip msdp sa-cache** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the MSDP SA cache:

```
switch(config)# show ip msdp route
MSDP SA Route Cache for Context "default" - 2138 entries
Source           Group           RP              ASN    Uptime
24.124.36.130    224.0.1.1       144.228.240.250 1239   17:35:19
64.104.160.29    224.0.1.1       204.69.199.17   109    17:35:19
128.59.21.232    224.0.1.1       128.59.0.51     14     03:33:59
128.117.37.217   224.0.1.1       128.117.243.9   194    04:07:17
```

```
128.117.37.220   224.0.1.1       128.117.243.9    194    04:08:45
129.49.88.9      224.0.1.1       199.109.44.1     5719   17:34:48
130.18.14.12     224.0.1.1       192.208.151.9    10546  17:35:19
130.37.20.4      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.20.5      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.20.7      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.64.252    224.0.1.1       145.145.255.6    1103   17:35:21
130.88.20.1      224.0.1.1       194.66.25.224    786    17:35:19
130.159.54.4     224.0.1.1       194.81.62.54     786    17:35:19
130.159.228.48   224.0.1.1       194.81.62.54     786    17:35:19
130.159.248.12   224.0.1.1       194.81.62.54     786    17:35:19
132.234.1.1      224.0.1.1       132.234.251.232  7575   13:40:17
134.174.190.41   224.0.1.1       192.5.66.202     1742   17:34:45
 --More--q
switch(config)#
```

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 BGP path to an 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ip msdp rpf 192.168.1.10
MSDP RPF-Peer for RP 192.168.1.10, VRF default:
  Mesh-group check:
    Peer 192.168.1.10, mesh-group member of my_mesh_group
  Peer/route-lookup check:
    Peer 192.168.1.10, only MSDP peer configured, peer is RP
switch(config)#
```

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 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) 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The **show ip msdp route** command is an alternative form of this command.

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the MSDP SA cache:

```
switch(config)# show ip msdp sa-cache
MSDP SA Route Cache for Context "default" - 2138 entries
Source           Group           RP              ASN    Uptime
24.124.36.130    224.0.1.1       144.228.240.250 1239   17:35:19
64.104.160.29    224.0.1.1       204.69.199.17   109    17:35:19
128.59.21.232    224.0.1.1       128.59.0.51     14     03:33:59
128.117.37.217   224.0.1.1       128.117.243.9   194    04:07:17
```

```
128.117.37.220   224.0.1.1       128.117.243.9    194    04:08:45
129.49.88.9      224.0.1.1       199.109.44.1     5719   17:34:48
130.18.14.12     224.0.1.1       192.208.151.9    10546  17:35:19
130.37.20.4      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.20.5      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.20.7      224.0.1.1       145.145.255.6    1103   17:35:21
130.37.64.252    224.0.1.1       145.145.255.6    1103   17:35:21
130.88.20.1      224.0.1.1       194.66.25.224    786    17:35:19
130.159.54.4     224.0.1.1       194.81.62.54     786    17:35:19
130.159.228.48   224.0.1.1       194.81.62.54     786    17:35:19
130.159.248.12   224.0.1.1       194.81.62.54     786    17:35:19
132.234.1.1      224.0.1.1       132.234.251.232  7575   13:40:17
134.174.190.41   224.0.1.1       192.5.66.202     1742   17:34:45
 --More--q
switch(config)#
```

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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about MSDP learned sources:

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

MSDP Learned Sources and Group-Limit Information for VRF "default"
Source           Group Count  Group Limit  Source Prefix       Violations
18.7.25.94       1            unlimited    --                  0
18.39.0.30       1            unlimited    --                  0
18.62.10.96      1            unlimited    --                  0
18.62.10.177     1            unlimited    --                  0
18.89.2.245      1            unlimited    --                  0
24.124.36.130    1            unlimited    --                  0
62.40.98.21      1            unlimited    --                  0
62.40.98.52      1            unlimited    --                  0
62.40.98.75      1            unlimited    --                  0
62.40.98.117     1            unlimited    --                  0
62.40.98.139     1            unlimited    --                  0
62.40.98.140     1            unlimited    --                  0
62.40.98.152     1            unlimited    --                  0
```

```
62.40.98.171     1            unlimited    --                 0
62.40.98.202     1            unlimited    --                 0
62.40.98.212     1            unlimited    --                 0
 --More--q
switch(config)#
```

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 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ip msdp summary
MSDP Peer Status Summary for VRF "default"
Local ASN: 0, originator-id: 0.0.0.0

Number of configured peers:  1
Number of established peers: 0
Number of shutdown peers:    0

Peer            Peer        Connection      Uptime/   Last msg  (S,G)s
Address         ASN         State           Downtime  Received  Received
192.168.1.10    8           Listening       01:35:13  never     0
switch(config)#
```

show ip netstack mroute

To show IPv4 multicast routes in the Network Stack cache, use the **show ip netstack mroute** command.

show ip netstack mroute [**vrf** *vrf-name*]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the VRF name.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display multicast routes in the Network Stack cache:

```
switch(config)# show ip netstack mroute
(0.0.0.0/0, 225.1.1.1/32)
  Software switched packets: 1, bytes: 84
(4.1.1.2/32, 225.1.1.1/32), data-created
  Software switched packets: 2, bytes: 168
(0.0.0.0/0, 225.1.1.2/32)
  Software switched packets: 0, bytes: 0
(4.1.1.2/32, 225.1.1.2/32), data-created
  Software switched packets: 5, bytes: 420
(0.0.0.0/0, 225.1.1.3/32)
  Software switched packets: 0, bytes: 0
(4.1.1.2/32, 225.1.1.3/32), data-created
  Software switched packets: 2, bytes: 168
(0.0.0.0/0, 225.1.1.4/32)
  Software switched packets: 0, bytes: 0
(4.1.1.2/32, 225.1.1.4/32), data-created
  Software switched packets: 2, bytes: 168
(0.0.0.0/0, 225.1.1.5/32)
  Software switched packets: 0, bytes: 0
(4.1.1.2/32, 225.1.1.5/32), data-created
  Software switched packets: 2, bytes: 168
(0.0.0.0/0, 226.1.1.1/32)
```

```
  Software switched packets: 0, bytes: 0
(0.0.0.0/0, 226.2.2.2/32)
  Software switched packets: 0, bytes: 0
(0.0.0.0/0, 232.0.0.0/8)
  Software switched packets: 0, bytes: 0
switch(config)#
```

show ip pim df

To display information about the designated forwarders (DFs) for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim df** command.

show ip pim df [*rp-or-group*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

rp-or-group	(Optional) RP or group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM DFs:

```
switch(config)# show ip pim df
Bidir-PIM Designated Forwarder Information for VRF "default"

RP Address (ordinal)   DF-bits          RP Metric  Group Range
2.2.2.2 (2)            00000002 (1)     [0/0]      224.128.0.0/9

  Interface            DF Address       DF State   DF Metric    DF Uptime
  Loopback0            1.1.1.1          Winner     [0/0]        00:28:14
  Ethernet2/2         10.2.0.2         Lose       [0/0]        00:28:14

switch(config)#
```

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

```
switch(config)# show ip pim event-history msgs
Note: PIM process currently not running
switch(config)#
```

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**}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM group ranges:

```
switch(config)# show ip pim group-range
PIM Group-Range Configuration for VRF "default"
Group-range        Mode      RP-address       Shared-tree-only range
239.128.1.0/24     SSM       -                -
224.0.0.0/9        ASM       192.0.2.33       -
switch(config)#
```

Related Commands

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

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**}]

show ip pim interface *if-type if-number*

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.
all	Specifies all VRFs.
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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ip pim interface ethernet 2/11
PIM Interface Status for VRF "default"
Ethernet2/11, Interface status: protocol-down/link-down/admin-up
  IP address: 192.168.1.222, IP subnet: 192.168.1.0/24
  PIM DR: 192.168.1.222, DR's priority: 5
  PIM neighbor count: 0
  PIM hello interval: 30 secs, next hello sent in: 00:00:03
  PIM neighbor holdtime: 105 secs
```

```
  PIM configured DR priority: 5
  PIM border interface: no
  PIM GenID sent in Hellos: 0x112ba48b
  PIM Hello MD5-AH Authentication: enabled
  PIM Neighbor policy: my_neighbor_policy
  PIM Join-Prune policy: none configured
  PIM BFD Enabled: Yes
  PIM Interface Statistics, last reset: never
    General (sent/received):
      Hellos: 3145/0, JPs: 0/0, Asserts: 0/0
      Grafts: 0/0, Graft-Acks: 0/0
      DF-Offers: 0/0, DF-Winners: 0/0, DF-Backoffs: 0/0, DF-Passes: 0/0
    Errors:
      Checksum errors: 0, Invalid packet types/DF subtypes: 0/0
      Authentication failed: 0
      Packet length errors: 0, Bad version packets: 0, Packets from self: 0
      Packets from non-neighbors: 0
      JPs received on RPF-interface: 0
      (*,G) Joins received with no/wrong RP: 0/0
      (*,G)/(S,G) JPs received for SSM/Bidir groups: 0/0
      JPs policy filtered: 0
switch(config)#
```

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 neighbor

To display information about IPv4 Protocol Independent Multicast (PIM) neighbors, use the **show ip pim neighbor** command.

show ip pim neighbor {[*if-type if-number*] | [*neighbor-addr*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
neighbor-addr	(Optional) IP address of a neighbor.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM neighbors:

```
switch(config)# show ip pim neighbor
PIM Neighbor Status for VRF "default"
Neighbor         Interface            Uptime    Expires   DR         Bidir-     BFD-Enabled
                                                          Priority   Capable    (Up/Down)
2.1.1.2          Ethernet2/2          07:53:06  00:01:40  1          yes        Yes (Down)
switch(config)#
```

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 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**}]

Syntax Description

group	Group address.
source	(Optional) Source address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Changed output to include vPC information.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display PIM interfaces for a group:

```
switch(config)# show ip pim oif-list 225.1.1.1
PIM OIF-List for VRF default
(*, 225.1.1.1/32)
  Incoming interface: Ethernet2/1, RPF nbr 4.1.1.1
  Timeout interval: 38 secs left
  Oif-list (count: 0): (1) 00000010
  Timeout-list (count: 0): (0) 00000000
  Immediate-list (count: 0):
  Immediate-timeout-list (count: 0):
  Assert-lost-list (count: 1):
    Vlan5
switch(config)#
```

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 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**}]

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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM policy statistics:

```
switch(config)# show ip pim policy statistics auto-rp rp-candidate-policy
C: No. of comparisions, M: No. of matches

route-map rpolicy permit 1
  match ip multicast group 225.1.1.0/24      C: 0      M: 0

Total accept count for policy: 0
Total reject count for policy: 0
switch(config)#
```

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 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**}]

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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM policy statistics:

```
switch(config)# show ip pim policy statistics bsr bsr-policy
C: No. of comparisions, M: No. of matches

route-map rpolicy permit 1
  match ip multicast group 225.1.1.0/24      C: 0      M: 0

Total accept count for policy: 0
Total reject count for policy: 0
switch(config)#
```

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 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 *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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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
C: No. of comparisions, M: No. of matches

route-map rpolicy permit 1
  match ip multicast group 225.1.1.0/24         C: 0      M: 0

Total accept count for policy: 0
Total reject count for policy: 0
switch(config)#
```

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 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 *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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM policy statistics:

```
switch(config)# show ip pim policy statistics neighbor-policy ethernet 2/12
C: No. of comparisions, M: No. of matches

route-map rpolicy permit 1
  match ip multicast group 225.1.1.0/24         C: 0      M: 0

Total accept count for policy: 0
Total reject count for policy: 0
switch(config)#
```

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 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**}]

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise 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
C: No. of comparisions, M: No. of matches

route-map rmap1 permit 10
  match ip multicast group 225.1.1.0/24                    C: 0      M: 0

Total accept count for policy: 0
Total reject count for policy: 0
switch(config)#
```

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 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**}]

Syntax Description

source	Source address.
group	Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display PIM routes:

```
switch(config)# show ip pim route 224.1.1.1
PIM Routing Table for VRF "default" - 6 entries

(*, 224.0.0.0/4), RP 1.1.1.1*, bidir, expires 00:00:59, RP-bit
  Incoming interface: loopback4, RPF nbr 1.1.1.1
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 1, JP-holdtime round-up: 3

(*, 225.0.0.1/32), RP 1.1.1.1*, bidir, expires 0.000000 (00:00:06), RP-bit
  Incoming interface: loopback4, RPF nbr 1.1.1.1
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 1, JP-holdtime round-up: 3

(*, 225.0.1.1/32), RP 1.1.1.1*, bidir, expires 0.000000 (00:00:06), RP-bit
```

```
  Incoming interface: loopback4, RPF nbr 1.1.1.1
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 1, JP-holdtime round-up: 3

switch(config)#
```

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 rp

To display information about the RPs for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim rp** command.

show ip pim rp [*group*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM RPs:

```
switch(config)# show ip pim rp
PIM RP Status Information for VRF "default"
BSR: Not Operational
Auto-RP RPA: 192.168.1.222*, next Discovery message in: 00:00:06
BSR RP Candidate policy: my_bsr_rp_candidate_policy
BSR RP policy: my_bsr_policy
Auto-RP Announce policy: my_rp_candidate_policy
Auto-RP Discovery policy: my_mapping_agent_policy

Anycast-RP 192.0.2.3 members:
  192.0.2.31

RP: 192.0.2.33, (0), uptime: 04:08:11, expires: never,
  priority: 0, RP-source: (local), group ranges:
      224.0.0.0/9
switch(config)#
```

show ip pim rp-hash

To display information about the RP-hash values for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim rp-hash** command.

show ip pim rp-hash *group* [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	Group address for RP lookup.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM RP-hash values:

```
switch(config)# show ip pim rp-hash 224.1.1.1
PIM Hash Information for VRF "default"
PIM RPs for group 224.1.1.1, using hash-length: 0 from BSR: 10.2.0.1
  RP 10.2.0.1, hash: 1894762513 (selected)
switch(config)#
```

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 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**}]

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(3)	Changed output to include vPC information when PIM is in vPC mode.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM statistics (if PIM is not in vPC mode, the vPC statistics are not displayed):

```
switch(config)# show ip pim statistics
PIM Global Counter Statistics for VRF:default, last reset: never
  Register processing (sent/received):
    Registers: 0/0, Null registers: 0/0, Register-Stops: 0/0
    Registers received and not RP: 0
    Registers received for SSM/Bidir groups: 0/0
  BSR processing (sent/received):
    Bootstraps: 0/0, Candidate-RPs: 0/0
    BSs from non-neighbors: 0, BSs from border interfaces: 0
    BS length errors: 0, BSs which RPF failed: 0
    BSs received but not listen configured: 0
    Cand-RPs from border interfaces: 0
    Cand-RPs received but not listen configured: 0
  Auto-RP processing (sent/received):
    Auto-RP Announces: 0/0, Auto-RP Discoveries: 0/0
```

```
    Auto-RP RPF failed: 0, Auto-RP from border interfaces: 0
    Auto-RP invalid type: 0, Auto-RP TTL expired: 0
    Auto-RP received but not listen configured: 0
  General errors:
    Control-plane RPF failure due to no route found: 0
    Data-plane RPF failure due to no route found: 0
    Data-plane no multicast state found: 0
    Data-plane create route state count: 2
  vPC packet stats:
    assert requests sent: 1
    assert requests received: 1
    assert request send error: 0
    assert response sent: 1
    assert response received: 1
    assert response send error: 0
    assert stop sent: 0
    assert stop received: 1
    assert stop send error: 0
switch(config)#
```

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 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**]

Syntax Description

vrf-name	(Optional) VRF name.
all	(Optional) Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM by VRF:

```
switch(config)# show ip pim vrf
PIM Enabled VRF
VRF Name              VRF      Table       Interface   BFD Enabled
                      ID       ID          Count
default               1        0x00000001  1           Yes
```

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 ipv6 mld groups

To display information about the Multicast Listener Discovery (MLD) attached-group membership, use the **show ipv6 mld groups** command.

show ipv6 [**icmp**] **mld groups** [{*source* [*group*]} | {*group* [*source*]}] [*if-type if-number*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

icmp	(Optional) Specifies ICMPv6 commands.
source	IPv6 source address.
group	(Optional) IPv6 multicast group address.
if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the MLD group membership:

```
switch(config)# show ipv6 mld groups
MLD Connected Group Membership for VRF "default" - 13 total entries (*, ff13::0001)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:25/00:03:54, Last Reporter: fe80::0230:48ff:fe34:0d5b
```

```
(*, ff13::0002)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:21/00:03:58, Last Reporter: fe80::0230:48ff:fe34:0d5b

(*, ff13::0003)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:22/00:03:57, Last Reporter: fe80::0230:48ff:fe34:0d5b

(*, ff13::0004)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:23/00:03:56, Last Reporter: fe80::0230:48ff:fe34:0d5b

(*, ff13::0005)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:24/00:03:55, Last Reporter: fe80::0230:48ff:fe34:0d5b

(*, ff13::0006)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:25/00:03:54, Last Reporter: fe80::0230:48ff:fe34:0d5b

(*, ff13::0007)
  Type: Local, Interface: Ethernet2/1
  Uptime/Expires: 00:00:27/00:03:52, Last Reporter: fe80::0230:48ff:fe34:0d5b
switch(config)#
```

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 ipv6 mld local-groups

To display information about the local group membership for Multicast Listener Discovery (MLD), use the **show ipv6 mld local-groups** command.

show ipv6 [**icmp**] **mld local-groups** [*if-type if-number*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

icmp	(Optional) Specifies ICMPv6 commands.
if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ipv6 mld local-groups
MLD Locally Joined Group Membership for VRF "default"
Group   Type     Interface   Last Reported
(*, ff13::0001)
        Local    Eth2/1      00:00:55
(*, ff13::0002)
        Local    Eth2/1      00:00:46
(*, ff13::0003)
        Local    Eth2/1      00:00:54
```

```
(*, ff13::0004)
        Local    Eth2/1      00:00:51
(*, ff13::0005)
        Local    Eth2/1      00:00:49
(*, ff13::0006)
        Local    Eth2/1      00:00:46
(*, ff13::0007)
        Local    Eth2/1      00:00:54
(*, ff13::0008)
        Local    Eth2/1      00:00:52
(*, ff13::0009)
        Local    Eth2/1      00:00:50
(*, ff13::0010)
        Local    Eth2/1      00:00:48
(*, ff14::0001)
        Local    Eth2/1      00:00:46
(*, ff1e::0001)
        Local    Eth2/1      00:00:55
(*, ff1e::0002)
        Static   Lo22        03:47:54
switch(config)#
```

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 ipv6 mroute

To display information about IPv6 multicast routes, use the **show ipv6 mroute** command.

show ipv6 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.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about multicast routes:

```
switch(config)# show ipv6 mroute
IPv6 Multicast Routing Table for VRF "default"

(*, ff30::/32), uptime: 1d02h, pim6 ipv6
  Incoming interface: Null, RPF nbr: 0::
  Outgoing interface list: (count: 0)

switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute summary	Displays summary information about IPv6 multicast routes.

show ipv6 mroute summary

To display summary information about IPv6 multicast routes, use the **show ipv6 mroute summary** command.

show ipv6 mroute summary [**count** | **software-forwarded**]] [**vrf** {*vrf-name* | **all**}]

show ipv6 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.
all	Specifies all VRFs.
group	Specifies a group address for a route.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show ipv6 mroute summary
IPv6 Multicast Routing Table for VRF "default"

Total number of routes: 1
Total number of (*,G) routes: 0
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 0, rough average sources per group: 0.0
```

```
Group: ff30::/32, Source count: 0
Source            packets       bytes           aps   pps       bit-rate  oifs
(*,G)             0             0               0     0         0 bps     0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim df

To display information about the designated forwarders (DFs) for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim df** command.

show ipv6 pim df [*rp-or-group*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

rp-or-group	(Optional) RP or group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 DFs:

```
switch(config)# show ipv6 pim df
Bidir-PIM6 Designated Forwarder Information for VRF "default"

RP Address (ordinal)   RP Metric       Group Range
0001::0001 (7)
                       [0/0]           ff00::/8

  Interface     DF Address                DF State DF Metric  DF Uptime
* Lo1           0::                       Lose     [0/0]      00:00:02
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim event-history

To display information in the IPv6 Protocol Independent Multicast (PIM6) event history buffers, use the **show ipv6 pim event-history** command.

show ipv6 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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information in the PIM6 msgs event history buffer:

```
switch(config)# show ipv6 pim event-history msgs
Note: PIM6 process currently not running
switch(config)#
```

Related Commands

Command	Description
clear ipv6 pim event-history	Clears the contents of the PIM6 event history buffers.
ipv6 pim event-history	Configures the size of PIM6 event history buffers.

show ipv6 pim group-range

To display information about IPv6 Protocol Independent Multicast (PIM6) group ranges, use the **show ipv6 pim group-range** command.

show ipv6 pim group-range [*group*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 group ranges:

```
switch(config)# show ipv6 pim group-range
PIM6 Group-Range Configuration for VRF "default"
Group-range               Mode      RP-address          Shared-tree-only range
ff30::/32                 SSM       -                   -
ff1e:abcd:def1::/96       ASM       2001:0db8:0000:abcd::0001
                                                        -
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim interface

To display information about the enabled interfaces for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim interface** command.

show ipv6 pim interface [**brief**] [**vrf** {*vrf-name* | **all**}]

show ipv6 pim interface *if-type if-number*

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6-enabled interfaces:

```
switch(config)# show ipv6 pim interface
PIM6 Interface Status for VRF "default"
Ethernet2/12, Interface status: protocol-down/link-down/admin-down
  IPv6 address: none
  PIM6 DR: 0::, DR's priority: ?
  PIM6 neighbor count: 0
  PIM6 hello interval: 23 secs (configured 22222 ms), next hello sent in: 00:00:08
```

```
  PIM6 neighbor holdtime: 81 secs
  PIM6 configured DR priority: 1
  PIM6 border interface: no
  PIM6 GenID sent in Hellos: 0x144b4667
  PIM6 Hello MD5-AH Authentication: disabled
  PIM6 Neighbor policy: none configured
  PIM6 Join-Prune policy: none configured
  PIM6 Interface Statistics, last reset: never
    General (sent/received):
      Hellos: 0/0, JPs: 0/0, Asserts: 0/0
      Grafts: 0/0, Graft-Acks: 0/0
      DF-Offers: 0/0, DF-Winners: 0/0, DF-Backoffs: 0/0, DF-Passes: 0/0
    Errors:
      Checksum errors: 0, Invalid packet types/DF subtypes: 0/0
      Authentication failed: 0
      Packet length errors: 0, Bad version packets: 0, Packets from self: 0
      Packets from non-neighbors: 0
      JPs received on RPF-interface: 0
      (*,G) Joins received with no/wrong RP: 0/0
      (*,G)/(S,G) JPs received for SSM/Bidir groups: 0/0
      JPs policy filtered: 0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim neighbor

To display information about IPv6 Protocol Independent Multicast (PIM6) neighbors, use the **show ipv6 pim neighbor** command.

show ipv6 pim neighbor {[*if-type if-number*] | [*neighbor-addr*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

if-type	(Optional) Interface type. For more information, use the question mark (?) online help function.
if-number	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
neighbor-addr	(Optional) IPv6 address of a neighbor.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 neighbors:

```
switch(config)# show ipv6 pim neighbor
PIM6 Neighbor Status for VRF "default"
Neighbor Address             Interface     Uptime    Expires   DR   Bidir
                                                               Pri
fe80::0230:48ff:fe34:0d67    Eth2/1        00:00:39  00:01:34  1    yes
  Secondary addresses:
    0001::0002
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim oif-list

To display information about IPv6 Protocol Independent Multicast (PIM6) interfaces for a group, use the **show ipv6 pim oif-list** command.

show ipv6 pim oif-list *group* [*source*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	Group address.
source	(Optional) Source address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display PIM6 interfaces for a group:

```
switch(config)# show ipv6 pim oif-list ff1e::0002
PIM6 OIF-List for VRF default
(*, ff1e::0002/128)
  Incoming interface: Ethernet2/2, RPF nbr 0002::0002
  Timeout interval: 45 secs left
  Oif-list (count: 2):
    Ethernet8/11, uptime: 00:01:18, pim6
    Ethernet8/11, uptime: 00:01:18, pim6
  Timeout-list (count: 0):
  Immediate-list (count: 0):
  Immediate-timeout-list (count: 0):
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim policy statistics jp-policy

To display information about the join-prune policy statistics for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim policy statistics j-policy** command.

show ipv6 pim policy statistics jp-policy *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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 policy statistics:

```
switch(config)# show ipv6 pim policy statistics jp-policy ethernet 2/2
C: No. of comparisions, M: No. of matches

route-map rmap1 permit 10
  match ipv6 multicast group ff1e::/128                      C: 0      M: 0

Total accept count for policy: 2
Total reject count for policy: 0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim policy statistics neighbor-policy

To display information about the neighbor policy statistics for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim policy statistics neighbor-policy** command.

show ipv6 pim policy statistics neighbor-policy *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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 policy statistics:

```
switch(config)# show ipv6 pim policy statistics neighbor-policy ethernet 2/2
C: No. of comparisions, M: No. of matches

route-map rmap2 permit 10
  match ipv6 multicast group ff1e::/128                    C: 0      M: 0

Total accept count for policy: 2
Total reject count for policy: 0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim route

To display information about IPv6 Protocol Independent Multicast (PIM6) routes, use the **show ipv6 pim route** command.

show ipv6 pim route {*source group* | *group* [*source*]} [**vrf** {*vrf-name* | **all**}]

Syntax Description

source	Source address.
group	Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display PIM6 routes:

```
switch(config)# show ipv6 pim route
PIM6 Routing Table for VRF "default" - 1 entries
(*, ff30::/32), expires 00:02:33
  Incoming interface: Null, RPF nbr 0::
  Oif-list:       (0) 00000000, timeout-list: (0) 00000000
  Immediate-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 2, JP-holdtime round-up: 3
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim rp

To display information about IPv6 Protocol Independent Multicast (PIM) RPs, use the **show ipv6 pim rp** command.

show ipv6 pim rp [*group*] [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 RPs:

```
switch(config)# show ipv6 pim rp
PIM6 RP Status Information for VRF "default"
BSR: 0::, uptime: 1d01h, expires: now,
      priority: 0, hash-length: 0
Auto-RP disabled
BSR RP Candidate policy: None
BSR RP policy: None
Auto-RP Announce policy: None
Auto-RP Discovery policy: None

RP: 2001:0db8:0000:abcd::0001, (0), uptime: 1d01h, expires: 0.000000,
 priority: 0, RP-source: (local), group ranges:
      ff1e:abcd:def1::/96
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim rp-hash

To display information about the RP-hash values for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim rp-hash** command.

show ipv6 pim rp-hash *group* [**vrf** {*vrf-name* | **all**}]

Syntax Description

group	Group address for the RP lookup.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 RP-hash values:

```
switch(config)# show ipv6 pim rp-hash
PIM6 Hash Information for VRF "default"
PIM6 RPs for group ff1e::0001, using hash-length: 126 from BSR: 0001::0001
  RP 0002::0001, hash: 1329585728 (selected)

show ip igmp snooping explicit-tracking
-----------------------------------------
switch# show ip igmp snooping explicit-tracking vlan 33
IGMPv3 Snooping Explicit-tracking information
Source/Group            Intf      Reporter        Uptime    Last-Join Expires
1.1.1.1 232.1.1.1       Eth2/1    3.3.3.3         00:01:33  00:04:27
switch(config)#
```

show ipv6 pim statistics

To display information about the packet counter statistics for IPv6 Protocol Independent Multicast (PIM6), use the **show ipv6 pim statistics** command.

show ipv6 pim statistics [**vrf** {*vrf-name* | **all**}]

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 statistics:

```
switch(config)# show ipv6 pim statistics
PIM6 Global Counter Statistics for VRF:default, last reset: never
  Register processing (sent/received):
    Registers: 0/0, Null registers: 0/0, Register-Stops: 0/0
    Registers received and not RP: 0
    Registers received for SSM/Bidir groups: 0/0
  BSR processing (sent/received):
    Bootstraps: 0/0, Candidate-RPs: 0/0
    BSs from non-neighbors: 0, BSs from border interfaces: 0
    BS length errors: 0, BSs which RPF failed: 0
    BSs received but not listen configured: 0
    Cand-RPs from border interfaces: 0
    Cand-RPs received but not listen configured: 0
  Auto-RP processing (sent/received):
    Auto-RP Announces: 0/0, Auto-RP Discoveries: 0/0
    Auto-RP RPF failed: 0, Auto-RP from border interfaces: 0
    Auto-RP invalid type: 0, Auto-RP TTL expired: 0
```

```
    Auto-RP received but not listen configured: 0
  General errors:
    Control-plane RPF failure due to no route found: 1
    Data-plane RPF failure due to no route found: 0
    Data-plane no multicast state found: 0
    Data-plane create route state count: 0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show ipv6 pim vrf

To display information about IPv6 Protocol Independent Multicast (PIM6) by virtual routing and forwarding (VRF) instance, use the **show ipv6 pim vrf** command.

show ipv6 pim vrf [*vrf-name* | **all**]

Syntax Description

vrf-name	(Optional) VRF name.
all	(Optional) Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about PIM6 by VRF:

```
switch(config)# show ipv6 pim vrf
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

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** | **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	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).

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	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(config)# show routing ip multicast event-history msgs

Msg events for MRIB Process
1) Event:E_DEBUG, length:38, at 219263 usecs after Wed Jan  7 17:16:45 2009
    [100] : nvdb: transient thread created

2) Event:E_DEBUG, length:38, at 217482 usecs after Wed Jan  7 17:16:45 2009
    [100] : nvdb: create transcient thread
```

```
3) Event:E_DEBUG, length:76, at 217477 usecs after Wed Jan  7 17:16:45 2009
    [100] : comp-mts-rx opc - from sap 27315 cmd mrib_internal_event_hist_command
4) Event:E_MTS_RX, length:60, at 535173 usecs after Wed Jan  7 17:16:36 2009
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0021C74B, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1575, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0021C749, Sync:NONE, Payloadsize:120
    Payload:
    0x0000:  01 00 00 00 04 00 01 00 00 04 00 00 00 00 00 00
5) Event:E_MTS_RX, length:60, at 675244 usecs after Wed Jan  7 17:15:47 2009
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0021C283, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1575, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0021C281, Sync:NONE, Payloadsize:148
    Payload:
    0x0000:  02 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00
6) Event:E_MTS_RX, length:60, at 525065 usecs after Wed Jan  7 17:15:36 2009
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0021C1F7, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1575, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0021C1F5, Sync:NONE, Payloadsize:120
    Payload:
    0x0000:  01 00 00 00 04 00 01 00 00 04 00 00 00 00 00 00
7) Event:E_MTS_RX, length:60, at 665138 usecs after Wed Jan  7 17:14:47 2009
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0021BCBB, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1575, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0021BCB9, Sync:NONE, Payloadsize:148
    Payload:
    0x0000:  02 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00
8) Event:E_MTS_RX, length:60, at 515080 usecs after Wed Jan  7 17:14:36 2009
    [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0021BC34, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1575, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0021BC32, Sync:NONE, Payloadsize:120
    Payload:
    0x0000:  01 00 00 00 04 00 01 00 00 04 00 00 00 00 00 00
switch(config)#
```

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 hardware proxy layer-3 detail

To display detail proxy Layer 3 forwarding information, use the **show hardware proxy layer-3 detail** command.

show hardware proxy layer-3 detail

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

EXEC

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

This command applies only to Cisco Nexus 7000 Series chassis that contain an F1 Series module or an M1 Series module. This command applies when you are running either FabricPath or Ethernet interfaces.

Examples

This example shows how to display detail proxy Layer 3 forwarding information:

```
switch# show hardware proxy layer-3 detail
switch#
```

Related Commands

Command	Description
show hardware proxy layer-3 detail	Displays detailed information on the proxy Layer 3 functionality.

show routing ipv6 multicast

To display information about IPv6 multicast routes, use the **show routing ipv6 multicast** command.

show routing ipv6 multicast [**vrf** {*vrf-name* | **all**}] {{*source group*} | {*group* [*source*]}}

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name.
all	Specifies all VRFs.
source	Source address for routes.
group	Group address for routes.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about IPv6 multicast routes:

```
switch(config)# show routing ipv6 multicast
IPv6 Multicast Routing Table for VRF "default"
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show routing ipv6 multicast clients

To display information about IPv6 multicast routing clients, use the **show routing ipv6 multicast clients** command.

show routing ipv6 multicast clients [*client-name*]

Syntax Description

client-name	(Optional) One of the following multicast routing client names: • m6rib • icmpv6 • ipv6 • static • pim6

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about IPv6 multicast routing clients:

```
switch(config)# show routing ipv6 multicast clients icmpv6
IPv6 Multicast Routing Client information

Client: icmpv6, client-id: 2, pid: 3742, mts-sap: 282
  Shared-memory: icmpv6, wants notifications
  Protocol is join-group 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
  Clear mroute notifications: sent 0, fail 0
  Add route requests:         rcvd 0, ack sent 0, ack fail 0
```

```
  Delete route requests:      rcvd 0, ack sent 0, ack fail 0
switch(config)#
```

Related Commands

Command	Description
show ipv6 mroute	Displays information about IPv6 multicast routes.

show routing ipv6 multicast event-history

To display information in the IPv6 Multicast Routing Information Base (M6RIB) event history buffers, use the **show routing ipv6 multicast event-history** command.

show routing ipv6 multicast event-history {**cli** | **errors** | **mfdm** | **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	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).

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information in the M6RIB msgs event history buffer:

```
switch(config)# show routing ipv6 multicast event-history msgs

Msg events for M6RIB Process
1) Event:E_DEBUG, length:38, at 269000 usecs after Tue Jan  6 18:45:50 2009
    [100] : nvdb: transient thread created

2) Event:E_DEBUG, length:38, at 267467 usecs after Tue Jan  6 18:45:50 2009
    [100] : nvdb: create transcient thread
```

```
3) Event:E_DEBUG, length:76, at 267461 usecs after Tue Jan  6 18:45:50 2009
    [100] : comp-mts-rx opc - from sap 3389 cmd m6rib_internal_event_hist_command
4) Event:E_MTS_RX, length:60, at 335251 usecs after Tue Jan  6 18:45:21 2009
    [RSP] Opc:MTS_OPC_MFDM_V6_ROUTE_STATS(75786), Id:0X00049141, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1606, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0004913F, Sync:NONE, Payloadsize:268
    Payload:
    0x0000:  01 00 00 80 05 00 01 00 00 08 00 00 00 00 00 00
5) Event:E_MTS_RX, length:60, at 325401 usecs after Tue Jan  6 18:44:21 2009
    [RSP] Opc:MTS_OPC_MFDM_V6_ROUTE_STATS(75786), Id:0X000489A2, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1606, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x000489A0, Sync:NONE, Payloadsize:268
    Payload:
    0x0000:  01 00 00 80 05 00 01 00 00 08 00 00 00 00 00 00
6) Event:E_MTS_RX, length:60, at 315289 usecs after Tue Jan  6 18:43:21 2009
    [RSP] Opc:MTS_OPC_MFDM_V6_ROUTE_STATS(75786), Id:0X00048457, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1606, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x00048455, Sync:NONE, Payloadsize:268
    Payload:
    0x0000:  01 00 00 80 05 00 01 00 00 08 00 00 00 00 00 00
7) Event:E_MTS_RX, length:60, at 305189 usecs after Tue Jan  6 18:42:21 2009
    [RSP] Opc:MTS_OPC_MFDM_V6_ROUTE_STATS(75786), Id:0X00047EFD, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1606, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x00047EFB, Sync:NONE, Payloadsize:268
    Payload:
    0x0000:  01 00 00 80 05 00 01 00 00 08 00 00 00 00 00 00
8) Event:E_MTS_RX, length:60, at 295210 usecs after Tue Jan  6 18:41:21 2009
    [RSP] Opc:MTS_OPC_MFDM_V6_ROUTE_STATS(75786), Id:0X0004794F, Ret:SUCCESS
    Src:0x00000901/214, Dst:0x00000901/1606, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x0004794D, Sync:NONE, Payloadsize:268
    Payload:
    0x0000:  01 00 00 80 05 00 01 00 00 08 00 00 00 00 00 00
switch(config)#
```

Related Commands

Command	Description
ipv6 routing multicast event-history	Configures the size of the IPv6 M6RIB event history buffers.
clear ipv6 routing multicast event-history	Clears information in the IPv6 M6RIB 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**}] {{*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.
all	Specifies all VRFs.
source	Source address for routes.
group	Group address for routes.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show routing multicast
IP Multicast Routing Table for VRF "default"

(*, 239.128.1.0/24), uptime: 1d01h, pim
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)
switch(config)#
```

Related Commands

Command	Description
ipv6 routing multicast event-history	Configures the size of the IPv6 M6RIB event history buffers.
clear ipv6 routing multicast event-history	Clears information in the IPv6 M6RIB event history buffers.

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

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about IPv4 multicast clients:

```
switch(config)# show routing multicast clients pim
IP Multicast Routing Client information

Client: pim, client-id: 6, pid: 3982, mts-sap: 1568
  Shared-memory: pim, wants notifications
  Protocol is ssm owner, bidir owner, shared-only mode owner,
  Join notifications:         sent 1, fail 0, ack rcvd 1
```

```
  Prune notifications:        sent 0, fail 0, ack rcvd 0
  RPF notifications:          sent 0, fail 0, ack rcvd 0
  Delete notifications:       sent 0, fail 0, ack rcvd 0
  Clear mroute notifications: sent 0, fail 0
  Add route requests:         rcvd 2, ack sent 2, ack fail 0
  Delete route requests:      rcvd 1, ack sent 1, ack fail 0

switch(config)#
```

Related Commands

Command	Description
ipv6 routing multicast event-history	Configures the size of the IPv6 M6RIB event history buffers.
clear ipv6 routing multicast event-history	Clears information in the IPv6 M6RIB event history buffers.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

Related Commands

Command	Description
show running-config msdp	Displays the information about the running-system configuration for Multicast Source Discovery Protocol

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show running-config msdp
version 4.0(3)
feature msdp
ip msdp originator-id loopback0
ip msdp peer 192.168.1.10 connect-source Ethernet2/11 remote-as 8
ip msdp sa-interval 88
ip msdp reconnect-interval 20
ip msdp group-limit 3 source 172.1.0.0/16
ip msdp group-limit 4000 source 192.168.1.0/24
ip msdp group-limit 4096 source 192.168.1.1/32
ip msdp flush-routes
ip msdp description 192.168.1.10 engineering peer
ip msdp keepalive 192.168.1.10 10 20
ip msdp sa-policy 192.168.1.10 my_sa_policy in
ip msdp mesh-group 192.168.1.10 my_mesh_group

switch(config)#
```

Related Commands

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

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show running-config pim
version 4.0(3)
feature pim
ip pim bsr-candidate Ethernet2/11
ip pim rp-address 192.0.2.33 group-list 224.0.0.0/9
ip pim rp-candidate Ethernet2/11 group-list 239.0.0.0/24 priority 3
ip pim auto-rp rp-candidate Ethernet2/12 group-list 239.0.0.0/24
ip pim send-rp-discovery Ethernet2/11 scope 30
ip pim log-neighbor-changes
ip pim bsr rp-candidate-policy my_bsr_rp_candidate_policy
ip pim bsr bsr-policy my_bsr_policy
ip pim auto-rp rp-candidate-policy my_rp_candidate_policy
ip pim auto-rp mapping-agent-policy my_mapping_agent_policy
ip pim ssm range 239.128.1.0/24
ip pim anycast-rp 192.0.2.3 192.0.2.31
ip pim auto-rp listen forward
ip pim state-limit 100000 reserved my_reserved_policy 40000

interface Ethernet2/11
  ip pim sparse-mode
```

```
  ip pim dr-priority 5
  ip pim hello-authentication ah-md5 3 78c3e5487bded5df
  ip pim neighbor-policy my_neighbor_policy

interface Ethernet2/12
  ip pim sparse-mode

switch(config)#
```

Related Commands

Command	Description
show startup-config pim6	Displays the information about the startup-system configuration for IPv6 Protocol Independent Multicast.

show running-config pim6

To display information about the running-system configuration for IPv6 Protocol Independent Multicast (PIM6), use the **show running-config pim6** command.

show running-config pim6 [**all**]

Syntax Description

all	(Optional) Displays configured and default information.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the PIM6 running-system configuration:

```
switch(config)# show running-config pim6
version 4.0(3)
feature pim6
ipv6 pim bidir-rp-limit 3
ipv6 pim rp-address 2001:0db8::abcd:0000:0000:0000:0001 group-list ff1e:abcd:def1::/96
ipv6 pim rp-candidate Ethernet2/11 group-list ff1e:abcd:def1::/24
ipv6 pim register-policy my_register_policy
ipv6 pim ssm range ff30::/32
ipv6 pim flush-routes

interface Ethernet2/12
  ipv6 pim sparse-mode
  ipv6 pim hello-interval 22222
switch(config)#
```

Related Commands

Command	Description
show startup-config pim6	Displays the information about the startup-system configuration for IPv6 Protocol Independent Multicast.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

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

Related Commands

Command	Description
show startup-config pim6	Displays the information about the startup-system configuration for IPv6 Protocol Independent Multicast.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show startup-config msdp
version 4.0(3)
feature msdp
ip msdp originator-id loopback0
ip msdp peer 192.168.1.10 connect-source Ethernet2/11 remote-as 8
ip msdp sa-interval 88
ip msdp reconnect-interval 20
ip msdp group-limit 3 source 172.1.0.0/16
ip msdp group-limit 4000 source 192.168.1.0/24
ip msdp group-limit 4096 source 192.168.1.1/32
ip msdp flush-routes
ip msdp description 192.168.1.10 engineering peer
ip msdp keepalive 192.168.1.10 10 20
ip msdp sa-policy 192.168.1.10 my_incoming_sa_policy in
switch(config)#
```

Related Commands

Command	Description
show startup-config pim6	Displays the information about the startup-system configuration for IPv6 Protocol Independent Multicast.

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.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

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

```
switch(config)# show startup-config pim
version 4.0(3)
feature pim
ip pim bsr-candidate Ethernet2/11
ip pim rp-address 192.0.2.33 group-list 224.0.0.0/9
ip pim rp-candidate Ethernet2/11 group-list 239.0.0.0/24 priority 3
ip pim auto-rp rp-candidate Ethernet2/12 group-list 239.0.0.0/24
ip pim send-rp-discovery Ethernet2/11 scope 30
ip pim log-neighbor-changes
ip pim bsr rp-candidate-policy my_bsr_rp_candidate_policy
ip pim bsr bsr-policy my_bsr_policy
ip pim auto-rp rp-candidate-policy my_rp_candidate_policy
ip pim auto-rp mapping-agent-policy my_mapping_agent_policy
ip pim ssm range 239.128.1.0/24
ip pim anycast-rp 192.0.2.3 192.0.2.31
ip pim auto-rp listen forward
ip pim state-limit 100000 reserved my_reserved_policy 40000

interface Ethernet2/11
  ip pim sparse-mode
```

```
  ip pim dr-priority 5
  ip pim hello-authentication ah-md5 3 78c3e5487bded5df
  ip pim neighbor-policy my_neighbor_policy

interface Ethernet2/12
  ip pim sparse-mode

switch(config)#
```

Related Commands

Command	Description
show startup-config pim6	Displays the information about the startup-system configuration for IPv6 Protocol Independent Multicast.

show startup-config pim6

To display information about the startup-system configuration for IPv6 Protocol Independent Multicast (PIM6), use the **show startup-config pim6** command.

show startup-config pim6 [**all**]

Syntax Description

all	(Optional) Displays configured and default information.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the startup-system configuration for PIM6:

```
switch(config)# show startup-config pim6
version 4.0(3)
feature pim6
ipv6 pim bidir-rp-limit 3
ipv6 pim rp-address 2001:0db8::abcd:0000:0000:0000:0001 group-list ff1e:abcd:def1::/96
ipv6 pim rp-candidate Ethernet2/11 group-list ff1e:abcd:def1::/24
ipv6 pim register-policy my_register_policy
ipv6 pim ssm range ff30::/32
ipv6 pim flush-routes

interface Ethernet2/12
  ipv6 pim sparse-mode
  ipv6 pim hello-interval 22222

switch(config)#
```

show system internal xbar fabric-flow-control-info

To display the system internal information, use the **show system internal** command.

show system internal xbar fabric-flow-control-info

Syntax Description

xbar	Displays the Xbar command.
fabric-flow-control-info	Displays the flow control information.

Defaults

None.

Command Modes

EXEC mode

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
5.2(1)	This command was introduced.

Usage Guidelines

None.

This command does not require a license.

Examples

This example shows how to display the system internal flow control information:

```
switch# show system internal xbar fabric-flow-control-info
--------------------------------------------------------------------------------
--------------| slot | fabric-flow-control (multicast) | ----------------------
-
--------------------------------------------------------------------------------
                   1     enabled
                   2    disabled
                   3     enabled
                   7     enabled
                   8    disabled
switch#
```

Related Commands

Command	Description
hardware fabric flow-control multicast forced	Configures the fabric flow control on all modules.