

Show Commands

This chapter describes the Cisco NX-OS PIM **show** commands.

show ip mroute

To display information about IPv4 multicast routes, use the show ip mroute command.

show ip mroute {group | {source group} | {group [source]}} [summary [software-forwarded]]
[vrf {vrf-name | all}]

Syntax Description

group	Group address for route.
source	Source address for route.
summary	(Optional) Displays route counts and packet rates.
software- forwarded	(Optional) Displays software-switched route counts only.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

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

```
switch(config)# show ip mroute
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 04:18:55, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

switch(config)#
```

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	Displays summary information about IPv4 multicast routes.
summary	

show ip mroute summary

To display summary information about IPv4 multicast routes, use the **show ip mroute summary** command.

show ip mroute summary [count | software-forwarded] [vrf {vrf-name | all}]

show ip mroute [group] **summary** [**software-forwarded**] [**vrf** {vrf-name | **all**}]

Syntax Description

count	(Optional) Displays only route counts.
software- forwarded	(Optional) Displays software-switched route counts only.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.
group	(Optional) Specifies a group address for a route.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

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

```
switch(config)# show ip mroute summary
IP Multicast Routing Table for VRF "default"

Total number of routes: 1
Total number of (*,G) routes: 0
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 0, rough average sources per group: 0.0
```

```
Group: 232.0.0.0/8, Source count: 0
Source packets bytes aps pps bit-rate oifs
(*,G) 0 0 0 0 0.000 bps 0
switch(config)#
```

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

```
switch# show ip mroute summary count
IP Multicast Routing Table for VRF "default"

Total number of routes: 2
Total number of (*,G) routes: 1
Total number of (S,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 1, rough average sources per group: 0.0
switch#
```

Related Commands

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

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. The name can be a maximum of 32
	alphanumeric characters and is case sensitive.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
	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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about PIM DFs:

switch(config)# show ip pim df

show ip pim event-history

To display information in the IPv4 Protocol Independent Multicast (PIM) event history buffers, use the **show ip pim event-history** command.

show ip pim event-history {errors | msgs | statistics}

Syntax Description

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

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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

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

```
Msg events for PIM Process
1) Event:E_DEBUG, length:38, at 165671 usecs after Sat Apr 12 08:35:02 2008
   [100] : nvdb: transient thread created
2) Event:E_DEBUG, length:38, at 165018 usecs after Sat Apr 12 08:35:02 2008
   [100] : nvdb: create transcient thread
3) Event:E_DEBUG, length:79, at 165014 usecs after Sat Apr 12 08:35:02 2008
   [100] : comp-mts-rx opc - from sap 3061 cmd pim_show_internal_event_hist_command
4) Event:E_DEBUG, length:35, at 63168 usecs after Sat Apr 12 08:34:25 2008
   [100] : nvdb: terminate transaction
5) Event:E_DEBUG, length:46, at 62809 usecs after Sat Apr 12 08:34:25 2008
   [100] : nvdb: pim_show_df_command returned 0x0
```

- 6) Event:E_DEBUG, length:38, at 62676 usecs after Sat Apr 12 08:34:25 2008 [100] : nvdb: transient thread created
- 7) Event:E_DEBUG, length:38, at 61971 usecs after Sat Apr 12 08:34:25 2008 [100] : nvdb: create transcient thread
- 8) Event:E_DEBUG, length:62, at 61966 usecs after Sat Apr 12 08:34:25 2008 [100] : comp-mts-rx opc from sap 3055 cmd pim_show_df_command
- 9) Event:E_DEBUG, length:50, at 771336 usecs after Sat Apr 12 06:14:41 2008 [100] : nvdb: _cli_send_my_if_command returned 0x0
- 10) Event:E_DEBUG, length:63, at 771105 usecs after Sat Apr 12 06:14:41 2008
 [100] : comp-mts-rx opc from sap 0 cmd _cli_send_my_if_command
 <--Output truncated-->
 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 | default | management}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM group ranges:

show ip pim interface

To display information about the enabled interfaces for IPv4 Protocol Independent Multicast (PIM), use the show ip pim interface command.

show ip pim interface [brief] [vrf {vrf-name | all | default | management}]

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

Syntax Description

brief	(Optional) Specifies a brief format for display.	
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.	
all	Specifies all VRFs.	
default	Specifies the default VRF.	
management	Specifies the management VRF.	
ethernet slot/port	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.	
port-channel number	Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.	
sub_if-number	(Optional) Subinterface number. The range is from 1 to 4093.	
vethernet veth-id	Specifies the virtual Ethernet interface. The range is from 1 to 1,048,575.	
vlan vlan-id	Specifies the VLAN. The range is from 1 to 4094.	

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display brief information about IPv4 PIM-enabled interfaces:

switch# show ip pim interface brief PIM Interface Status for VRF "default" Interface IP Address PIM DR Address Neighbor Border Count Interface Vlan100 192.0.2.252 192.0.2.252 no port-channel2000 192.0.2.1 192.0.2.1 1 no port-channel2001 192.0.2.8 192.0.2.8 1 no 192.0.2.2 192.0.2.2 Ethernet1/26 1 no Ethernet2/5 192.0.2.3 192.0.2.3 1 no Ethernet2/6 192.0.2.4 192.0.2.4 1 Ethernet2/7 192.0.2.5 192.0.2.5 1 no Ethernet3/11 192.0.2.6 192.0.2.6 1 no Ethernet3/12 192.0.2.7 192.0.2.7 no switch#

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

```
switch# show ip pim interface ethernet 2/5
PIM Interface Status for VRF "default"
Ethernet2/5, Interface status: protocol-up/link-up/admin-up
  IP address: 192.0.2.3, IP subnet: 192.0.2.0/24
  PIM DR: 192.0.2.3, DR's priority: 1
  PIM neighbor count: 1
  PIM hello interval: 30 secs, next hello sent in: 00:00:20
  PIM neighbor holdtime: 105 secs
  PIM configured DR priority: 1
  PIM border interface: no
  PIM GenID sent in Hellos: 0x36a7d6d1
  PIM Hello MD5-AH Authentication: disabled
  PIM Neighbor policy: none configured
  PIM Join-Prune inbound policy: none configured
  PIM Join-Prune outbound policy: none configured
  PIM BFD enabled: no
  PIM Interface Statistics, last reset: never
   General (sent/received):
     Hellos: 454/453, JPs: 4/0, Asserts: 0/0
      Grafts: 0/0, Graft-Acks: 0/0
     DF-Offers: 0/0, DF-Winners: 0/0, DF-Backoffs: 0/0, DF-Passes: 0/0
    Errors:
      Checksum errors: 0, Invalid packet types/DF subtypes: 0/0
      Authentication failed: 0
      Packet length errors: 0, Bad version packets: 0, Packets from self: 0
      Packets from non-neighbors: 0
     JPs received on RPF-interface: 0
      (*,G) Joins received with no/wrong RP: 0/0
      (*,G)/(S,G) JPs received for SSM/Bidir groups: 0/0
     JPs filtered by inbound policy: 0
     JPs filtered by outbound policy: 0
switch#
```

show ip pim neighbor

To display information about IPv4 Protocol Independent Multicast (PIM) neighbors, use the **show ip pim neighbor** command.

show ip pim neighbor {[ethernet slot/port | port-channel channel-number[.sub_if-number] |
 vethernet veth-id | vlan vlan-id] | [neighbor-addr]} [vrf {vrf-name | all | default |
 management}]

Syntax Description

ethernet slot/port	(Optional) Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
port-channel number	(Optional) Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.
sub_if-number	(Optional) Subinterface number. The range is from 1 to 4093.
vethernet veth-id	(Optional) Specifies the virtual Ethernet interface. The range is from 1 to 1,048,575.
vlan vlan-id	Specifies the VLAN. The range is from 1 to 4094.
neighbor-addr	(Optional) IP address of a neighbor.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification	
6.0(2)N1(1)	This command was introduced.	
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.	

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about PIM neighbors:

switch(config)# show ip pim neighbor
PIM Neighbor Status for VRF "default"

FIM Neighbor Sca	acus for var default					
Neighbor	Interface	Uptime	Expires	DR	Bidir-	BFD
				Priority	Capable	State
192.0.2.2	port-channel2000	03:43:40	00:01:21	1	no	n/a
192.0.2.9	port-channel2001	03:43:41	00:01:35	1	no	n/a
192.0.2.1	Ethernet1/26	03:43:44	00:01:33	1	no	n/a
192.0.2.2	Ethernet2/5	03:43:45	00:01:34	1	no	n/a
192.0.2.3	Ethernet2/6	03:43:45	00:01:19	1	no	n/a
192.0.2.4	Ethernet2/7	03:43:45	00:01:39	1	no	n/a
192.0.2.5	Ethernet3/11	03:43:46	00:01:35	1	no	n/a
192.0.2.6	Ethernet3/12	03:43:46	00:01:34	1	no	n/a
switch(config)#						

show ip pim oif-list

To display information about IPv4 Protocol Independent Multicast (PIM) interfaces for a group, use the **show ip pim oif-list** command.

show ip pim oif-list group [source] [vrf {vrf-name | all | default | management}]

Syntax Description

group	Group address.
source	(Optional) Source address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification	
6.0(2)N1(1)	This command was introduced.	
4.1(3)	Changed output to include vPC information.	

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display IPv4 PIM interfaces for a group:

```
switch(config)# show ip pim oif-list 232.0.0.0
PIM OIF-List for VRF default
(*, 232.0.0.0/8)
  Incoming interface: Null0, RPF nbr 0.0.0.0
  Timeout interval: 66 secs left
  Oif-list (count: 0):
  Timeout-list (count: 0):
```

```
Immediate-list (count: 0):
  Immediate-timeout-list (count: 0):
  Assert-lost-list (count: 0):
  switch(config)#
```

show ip pim policy statistics auto-rp

To display information about the Auto-RP policy statistics for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim policy statistics auto-rp** command.

show ip pim policy statistics auto-rp {rp-candidate-policy | mapping-agent-policy} [vrf {vrf-name | all | default | management}]

Syntax Description

rp-candidate- policy	Specifies candidate-RP messages.
mapping- agent-policy	Specifies mapping agent messages.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM policy statistics:

switch(config)# show ip pim policy statistics auto-rp rp-candidate-policy

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 $\{bsr-policy \mid rp-candidate-policy\} [vrf \{vrf-name \mid all \mid default \mid management\}]$

Syntax Description

bsr-policy	Specifies BSR messages.
rp-candidate-	Specifies candidate-RP messages.
policy	
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM policy statistics:

switch(config) # show ip pim policy statistics bsr bsr-policy

show ip pim policy statistics jp-policy

To display information about the join-prune policy statistics for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim policy statistics jp-policy** command.

show ip pim policy statistics jp-policy {**ethernet** *slot/port* | **port-channel** *channel-number*[.*sub_if-number*] | **vethernet** *veth-id* | **vlan** *vlan-id*}

Syntax Description

ethernet slot/port	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
port-channel number	Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.
sub_if-number	(Optional) Subinterface number. The range is from 1 to 4093.
vethernet veth-id	Specifies the virtual Ethernet interface. The range is from 1 to 1,048,575.
vlan vlan-id	Specifies the VLAN. The range is from 1 to 4094.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about PIM policy statistics:

switch(config)# show ip pim policy statistics jp-policy ethernet 2/12

show ip pim policy statistics neighbor-policy

To display information about the neighbor policy statistics for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim policy statistics neighbor-policy** command.

show ip pim policy statistics neighbor-policy {ethernet *slot/port* | **port-channel** *channel-number*[.*sub_if-number*] | **vethernet** *veth-id* | **vlan** *vlan-id*}

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Syntax	Description	1
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ethernet slot/port	Specifies the Ethernet interface and the slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
port-channel number	Specifies the EtherChannel interface and EtherChannel number. The range is from 1 to 4096.
sub_if-number	(Optional) Subinterface number. The range is from 1 to 4093.
vethernet veth-id	Specifies the virtual Ethernet interface. The range is from 1 to 1,048,575.
vlan vlan-id	Specifies the VLAN. The range is from 1 to 4094.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM policy statistics:

switch(config)# show ip pim policy statistics neighbor-policy ethernet 2/12

show ip pim policy statistics register-policy

To display information about the register policy statistics for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim policy statistics register-policy** command.

show ip pim policy statistics register-policy [vrf {vrf-name | all | default | management}]

Syntax Description

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

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about PIM policy statistics:

switch(config)# show ip pim policy statistics register-policy vrf all

show ip pim route

To display information about the routes for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim route** command.

show ip pim route {source group | group [source]} [vrf {vrf-name | all | default | management}]

Syntax Description

source	Source address.
group	Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies that all VRF entries be cleared from the IPv4 multicast routing table.
default	Specifies that the default VRF entry be cleared from the IPv4 multicast routing table.
management	Specifies that the management VRF entry be cleared from the IPv4 multicast routing table.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display IPv4 PIM routes:

switch(config)#

show ip pim rp

To display information about the rendezvous points (RPs) for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim rp** command.

show ip pim rp [group] [vrf {vrf-name | all | default | management}]

Syntax Description

group	(Optional) Group address.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.
default	Specifies the default VRF.
management	Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

switch(config)#

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM RPs:

switch(config)# show ip pim rp
PIM RP Status Information for VRF "default"
BSR disabled
Auto-RP disabled
BSR RP Candidate policy: None
BSR RP policy: None
Auto-RP Announce policy: None
Auto-RP Discovery policy: None

show ip pim rp

show ip pim rp-hash

To display information about the RP-hash values for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim rp-hash** command.

show ip pim rp-hash group [vrf {vrf-name | all | default | management}]

Syntax Description

group	Group address for RP lookup.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.
default	Specifies the default VRF.
management	Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM RP-hash values:

switch(config)# show ip pim rp-hash 224.1.1.1

show ip pim statistics

To display information about the packet counter statistics for IPv4 Protocol Independent Multicast (PIM), use the **show ip pim statistics** command.

show ip pim statistics [vrf {vrf-name | all | default | management}]

Syntax Description

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

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(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 LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM statistics (if PIM is not in vPC mode, the vPC statistics are not displayed):

```
switch(config)# show ip pim statistics
PIM Global Counter Statistics for VRF:default, last reset: never
Register processing (sent/received):
   Registers: 0/0, Null registers: 0/0, Register-Stops: 0/0
   Registers received and not RP: 0
   Registers received for SSM groups: 0
BSR processing (sent/received):
   Bootstraps: 0/0, Candidate-RPs: 0/0
   BSs from non-neighbors: 0, BSs from border interfaces: 0
   BS length errors: 0, BSs which RPF failed: 0
```

```
BSs received but not listen configured: 0
    Cand-RPs from border interfaces: 0
   Cand-RPs received but not listen configured: 0
 Auto-RP processing (sent/received):
   Auto-RP Announces: 0/0, Auto-RP Discoveries: 0/0
   Auto-RP RPF failed: 0, Auto-RP from border interfaces: 0
   Auto-RP invalid type: 0, Auto-RP TTL expired: 0
   Auto-RP received but not listen configured: 0
  General errors:
    Control-plane RPF failure due to no route found: 0
    Data-plane RPF failure due to no route found: 0
   Data-plane no multicast state found: 0
   Data-plane create route state count: 0
  vPC packet stats:
    assert requests sent: 0
    assert requests received: 0
    assert request send error: 0
    assert response sent: 0
    assert response received: 0
    assert response send error: 0
    assert stop sent: 0
    assert stop received: 0
    assert stop send error: 0
    rpf-source metric requests sent: 0
    rpf-source metric requests received: 0
    {\tt rpf}{\tt -source} metric request send error: 0
   rpf-source metric response sent: 0
   rpf-source metric response received: 0
    rpf-source metric response send error: 0
    {\tt rpf}{\tt -source} metric {\tt rpf} change trigger sent: 0
   rpf-source metric rpf change trigger received: 0
    \operatorname{rpf-source} metric \operatorname{rpf} change trigger send error: 0
switch(config)#
```

show ip pim vrf

To display information about IPv4 Protocol Independent Multicast (PIM) by virtual routing and forwarding (VRF) instance, use the **show ip pim vrf** command.

show ip pim vrf [vrf-name | all | default | detail | management]

Syntax Description

vrf-name	(Optional) VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	(Optional) Specifies all VRFs.
default	(Optional) Specifies the default VRF.
detail	(Optional) Displays detailed PIM VRF information.
management	(Optional) Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.
5.0(2)	Information on Bidirectional Forwarding Detection (BFD) was added.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 PIM by VRF:

switch(config)# show ip pim vrf

PIM Enabled VRF

This example shows how to display the detailed information about IPv4 PIM by VRF:

switch# show ip pim vrf detail

PIM Enabled VRF

```
Count
                                                     Enabled
                     ID
                              ID
                             0x00000001 1
default
                     1
                                                     no
 State Limit: None
 Register Rate Limit: none
 Shared tree ranges: none
  (S,G)-expiry timer: not configured
    (S,G)-list policy: none
    (S,G)-expiry timer config version 0, active version 0
  Pre-build SPT for all (S,G)s in VRF: disabled
switch#
```

show ip static-route

To display static routes from the unicast Routing Information Base (RIB), use the **show ip static-route** command.

show ip static-route [vrf {vrf-name | all | default | management}]

Syntax Description

vrf vrf-name	(Optional) Specifies the virtual routing and forwarding (VRF) context name. The name can be any case-sensitive, alphanumeric string up to 32 characters.
all	(Optional) Specifies all VRF instances.
default	(Optional) Specifies the default VRF.
management	(Optional) Specifies the management VRF.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the static routes:

switch(config)# show ip static-route
Static-route for VRF "default"(1)

IPv4 Unicast Static Routes:
Total number of routes: 0, unresolved: 0
switch(config)#

Related Commands

Command	Description
ip route	Configures a static route.

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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)#
```

show ipv6 mroute

Related Commands

Command	Description
show ipv6 mroute	Displays summary information about IPv6 multicast routes.
summary	

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.	
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
5.0(3)N1(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 ($,G) routes: 0
Total number of (*,G-prefix) routes: 1
Group count: 0, rough average sources per group: 0.0
```

show ipv6 mroute summary

Group: ff30::/32, Source count: 0 Source packets bytes (*,G) 0 0 bit-rate oifs aps pps 0 0 0 bps 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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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
                DF Address
                                           DF State DF Metric DF Uptime
  Interface
* Lo1
                                                               00:00:02
                                           Lose
                                                    [0/0]
switch(config)#
```

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
5.0(3)N1(1)	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	Clears the contents of the PIM6 event history buffers.
event-history	
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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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

 ${\tt PIM6~Group-Range~Configuration~for~VRF~"default"}$

Group-range Mode RP-address Shared-tree-only range ff30::/32 SSM - -

ffle:abcd:def1::/96 ASM 2001:0db8:0000:abcd::0001

switch(config)#

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
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
5.0(3)N1(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)#
```

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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:

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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) #
```

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
5.0(3)N1(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)#
```

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
5.0(3)N1(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

```
match ipv6 multicast group ff1e::/128

Total accept count for policy: 2

Total reject count for policy: 0
```

route-map rmap2 permit 10

C: 0 M: 0

switch(config)#

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

This example shows how to display PIM6 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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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:

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.	
all	Specifies all VRFs.	

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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 ffle::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
                              Reporter
                                                 Uptime
                      Tntf
                                                          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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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)#
```

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. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
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
5.0(3)N1(1)	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)#

show routing ip multicast event-history

To display information in the IPv4 Multicast Routing Information Base (MRIB) event history buffers, use the **show routing ip multicast event-history** command.

show routing ip multicast event-history {cli | errors | mfdm-debugs | mfdm-stats | msgs | rib | statistics | vrf}

Syntax Description

cli	Displays the event history buffer of type CLI.
errors	Displays the event history buffer of type errors.
mfdm-debugs	Displays the event history buffer of type multicast FIB distribution (MFDM).
mfdm-stats	Displays the event history buffer of type MFDM sum.
msgs	Displays the event history buffer of type msgs.
rib	Displays the event history buffer of type RIB.
statistics	Displays information about the event history buffers.
vrf	Displays the event history buffer of type virtual routing and forwarding (VRF).

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	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 932956 usecs after Sat Apr 12 09:09:41 2008
 [100] : nvdb: transient thread created
- 2) Event:E_DEBUG, length:38, at 932269 usecs after Sat Apr 12 09:09:41 2008
 [100] : nvdb: create transcient thread

- 3) Event:E_DEBUG, length:75, at 932264 usecs after Sat Apr 12 09:09:41 2008 [100] : comp-mts-rx opc from sap 3210 cmd mrib_internal_event_hist_command
- 4) Event:E_MTS_RX, length:60, at 362578 usecs after Sat Apr 12 09:08:51 2008 [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F217E, Ret:SUCCESS Src:0x00000101/214, Dst:0x00000101/1203, Flags:None HA_SEQNO:0X00000000, RRtoken:0x000F217B, Sync:NONE, Payloadsize:148 Payload:
- 0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00
 5) Event:E_MTS_RX, length:60, at 352493 usecs after Sat Apr 12 09:07:51 2008
 [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0000F188B, Ret:SUCCESS
 Src:0x00000101/214, Dst:0x00000101/1203, Flags:None
 HA_SEQNO:0X00000000, RRtoken:0x000F1888, Sync:NONE, Payloadsize:148
 Payload:
- 0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00
 6) Event:E_MTS_RX, length:60, at 342641 usecs after Sat Apr 12 09:06:51 2008
 [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X0000F0DF0, Ret:SUCCESS
 Src:0x00000101/214, Dst:0x00000101/1203, Flags:None
 HA_SEQNO:0X00000000, RRtoken:0x000F0DED, Sync:NONE, Payloadsize:148
 Payload:
- 0x0000: 01 00 00 00 05 00 01 00 00 04 00 00 00 00 00 00
 7) Event:E_MTS_RX, length:60, at 332954 usecs after Sat Apr 12 09:05:51 2008
 [RSP] Opc:MTS_OPC_MFDM_V4_ROUTE_STATS(75785), Id:0X000F0493, Ret:SUCCESS
 <--Output truncated-->
 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	Displays detailed information on the proxy Layer 3 functionality.
layer-3 detail	

show routing ipv6 multicast

To display information about IPv6 multicast routes, use the **show routing ipv6 multicast** command.

 $\textbf{show routing ipv6 multicast [vrf \{\textit{vrf-name} \mid \textbf{all}\}] \{\{\textit{source group}\} \mid \{\textit{group [source}]\}\}\}$

Syntax Description

vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.
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
5.0(3)N1(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)#

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
5.0(3)N1(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

```
irvo murcicast Routing Cirent information
```

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)#

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
5.0(3)N1(1)	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

 ${\tt Msg\ events\ for\ M6RIB\ Process}$

- 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
- 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:0X0000489A2, 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
- 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
- 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:0X000047EFD, 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
- 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:0X00004794F, Ret:SUCCESS Src:0X00000901/214, Dst:0X00000901/1606, Flags:None HA_SEQNO:0X00000000, RRtoken:0X0004794D, Sync:NONE, Payloadsize:268 Payload:

 0×0000 : 01 00 00 80 05 00 01 00 00 08 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 | default | management}]
{{source group} | {group [source]}}

Syntax Description

ip	(Optional) Specifies IPv4 routes.
ipv4	(Optional) Specifies IPv4 routes.
vrf	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
vrf-name	VRF name. The name can be a maximum of 32 alphanumeric characters and is case sensitive.
all	Specifies all VRFs.
default	Specifies the default VRF.
management	Specifies the management VRF.
source	Source address for routes.
group	Group address for routes.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

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

```
switch(config)# show routing multicast
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 05:11:19, pim ip
   Incoming interface: Null, RPF nbr: 0.0.0.0
   Outgoing interface list: (count: 0)
```

switch(config)#

show routing multicast

show routing multicast clients

To display information about IPv4 multicast routing clients, use the **show routing multicast clients** command.

show routing [ip | ipv4] multicast clients [client-name]

Syntax Description

ip	(Optional) Specifies IPv4 multicast clients.
ipv4	(Optional) Specifies IPv4 multicast clients.
client-name	(Optional) One of the following multicast routing client names:
	• mrib
	• igmp
	• static
	• msdp
	• ip
	• pim

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about IPv4 multicast clients:

switch(config)# show routing multicast clients pim
IP Multicast Routing Client information

Client: pim, client-id: 5, pid: 5296, mts-sap: 310

Shared-memory: pim, Notifications: joins prunes rpf delete repopulate Protocol is ssm owner, bidir owner, shared-only mode owner,

Join notifications: sent 1, fail 0, ack rcvd 1

```
Prune notifications:

RPF notifications:

Sent 0, fail 0, ack rcvd 0

Repopulate notifications:

Repopulate notifications:

Sent 0, fail 0, ack rcvd 0

Repopulate notifications:

Sent 0, fail 0, ack rcvd 0

Clear mroute notifications:

Sent 0, fail 0

Figure 1

Figure 1

Figure 1

Figure 2

Figure 2

Figure 2

Figure 3

Figure 3

Figure 3

Figure 3

Figure 3

Figure 4

Figure 3

Figure 4

Figure 3

Figure 4

Figure 5

Figure 4

Figure 5

Figure 4

Figu
```

switch(config)#

show running-config pim

To display information about the running-system configuration for IPv4 Protocol Independent Multicast (PIM), use the **show running-config pim** command.

show running-config pim [all]

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all (Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about the IPv4 PIM running-system configuration:

Need new output1

```
switch(config) # show running-config pim
!Command: show running-config pim
!Time: Sat Apr 12 09:15:11 2008

version 5.0(3)N1(1)
feature pim

ip pim ssm range 232.0.0.0/8

interface Vlan20
  ip pim sparse-mode

switch(config) #
```

1.

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]

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(Optional) Displays configured and default information.

Defaults

None

all

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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 ffle:abcd:def1::/96
ipv6 pim rp-candidate Ethernet2/11 group-list ffle: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 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]

•	_		
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all (Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

Usage Guidelines

This command requires the LAN Base Services license.

Examples

This example shows how to display information about the startup-system configuration for IPv4 PIM: switch(config)# show startup-config pim

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]

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(Optional) Displays configured and default information.

Defaults

None

all

Command Modes

Any command mode

SupportedUserRoles

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

Command History

Release	Modification
5.0(3)N1(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 startup-config pim6