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## Show Commands

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

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# 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	
<b>vlan</b> <i>vlan-id</i>	(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
<b>group</b> <i>group-addr</i>	(Optional) Specifies a group address.
<b>source</b> <i>source-addr</i>	(Optional) Specifies a source address.

**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 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
```

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```
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
```

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## 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	
<b>table</b> <i>table_id</i>	(Optional) Specifies a table ID. The range is from 0x0 to 0xffffffff.
<b>vrf</b> <i>vrf-name</i>	(Optional) Specifies a virtual routing and forwarding (VRF) name.
<i>group</i>	(Optional) IPv6 group address.
<i>source</i>	(Optional) IPv6 source address.
<b>summary</b>	(Optional) Specifies 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 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
```

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```
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#
```

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## 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
---------------	------------------

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 multicast distribution messages:
----------	--

```
switch(config)# show forwarding distribution multicast
Number of Multicast FIB Processes Active: 2
Slot      FIB State
  2        ACTIVE
  7        ACTIVE
switch#
```

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# 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
mrrib       2          mrrib-mfdm
igmp        3          N/A
switch#
```

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# 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		
	<b>L2</b>	Specifies the Layer 2 OIF list.
	<b>L3</b>	Specifies the Layer 3 OIF list.
	<i>index</i>	(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#
```



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## 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	
<b>ip</b>	(Optional) Specifies IPV4 information.
<b>ipv4</b>	(Optional) Specifies IPV4 information.
<b>table id</b>	(Optional) Specifies the multicast routing table ID. The range is from 0 to 2147483647.
<b>vrf vrf_name</b>	(Optional) Specifies a virtual routing and forwarding (VRF) name.
<b>group</b>	(Optional) Specifies IPv4 multicast group.
<i>group-addr</i>	IPv4 multicast group address.
<i>mask</i>	(Optional) Mask for the group address.
<i>group-prefix</i>	(Optional) IPv4 multicast group prefix.
<b>source</b>	(Optional) Specifies IPv4 multicast source.
<i>source-addr</i>	IPv4 source address.
<i>source-mask</i>	(Optional) Mask for the group address.
<i>source-prefix</i>	(Optional) IPv4 multicast source prefix.
<b>summary</b>	(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.

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**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#
```

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## 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		
<b>vrf</b>	(Optional) Displays routes for a specific virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	Displays information for all VRFs.	
<b>group</b>	(Optional) Specifies multicast IPv6 group address.	
<i>group</i>	Multicast IPv6 group address with prefix.	
<i>group-addr</i>	Multicast IPv6 group address.	
<b>source</b>	Specifies multicast IPv6 source address.	
<i>source</i>	Multicast IPv6 source address with prefix.	
<i>source-addr</i>	Multicast IPv6 source address.	
<b>module num</b>	(Optional) Specifies module number.	
<b>summary</b>	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 <i>group-addr</i> and <i>source-addr</i> arguments.

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

**Examples** This example shows how to display information about the IPv6 multicast routes:

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```
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)#
```

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## 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

<b>module num</b>	(Optional) Specifies the module number.
<b>index</b>	(Optional) OIF list index.

### 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 outgoing interface (OIF) list:

```
switch(config)# show forwarding multicast outgoing-interface-list

Outgoing Interface List Index: 65535
Reference Count: 9
switch(config)#
```

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## 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
<b>vrf</b>	(Optional) Displays information for a specified virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Displays information for all VRFs.
<b>ip</b>	(Optional) Specifies IPv4.
<b>ipv4</b>	(Optional) Specifies IPv4.
<b>group</b>	(Optional) Specifies IPv4 multicast group address.
<i>group-addr</i>	IPv4 multicast group address.
<i>group-mask</i>	(Optional) IPv4 multicast group address mask.
<i>group-prefix</i>	(Optional) IPv4 multicast group prefix.
<b>source</b>	(Optional) Specifies IPv4 multicast source address.
<i>source-addr</i>	IPv4 multicast source address.
<i>source-mask</i>	(Optional) IPv4 multicast source address mask.
<i>source-prefix</i>	(Optional) IPv4 multicast source prefix.
<b>module num</b>	(Optional) Specifies the module number.
<b>summary</b>	Displays 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.

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## 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
```

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## 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		
<b>cli</b>	Displays events of type CLI.	
<b>debugs</b>	Displays events of type debug.	
<b>errors</b>	Displays events of type error.	
<b>events</b>	Displays events of type event.	
<b>ha</b>	Displays events of type HA.	
<b>igmp-internal</b>	Displays events of type IGMP internal.	
<b>msgs</b>	Displays events of type msg.	
<b>mtrace</b>	Displays events of type mtrace.	
<b>policy</b>	Displays events of type policy.	
<b>statistics</b>	Displays events of type statistics.	
<b>vrf</b>	Displays events of type VRF.	

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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
```



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```

[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**

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

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## 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	
<i>source</i>	Source IP address.
<i>group</i>	(Optional) Multicast IP address of the single group to display.
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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** 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
```

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```
224.1.1.2          L   GigabitEthernet2/8   00:00:02   00:04:17   1.0.8.3
switch(config)#
```

**Related Commands**

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

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## 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		
<i>if-type</i>		Interface type. For more information, use the question mark (?) online help function.
<i>if-number</i>		Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
<b>brief</b>		(Optional) Displays one line status per interface.
<b>vrf</b>		(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>		VRF name.
<b>all</b>		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
```

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```

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)#

```

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## 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		
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.	
<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.	
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	Specifies all VRFs.	

**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 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)#
```

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## show ip igmp route

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

```
show ip igmp route [{source [group]} | {group [source]}] [if-type if-number] [vrf {vrf-name | all}]
```

Syntax Description		
	<i>source</i>	Source IP address.
	<i>group</i>	(Optional) Multicast IP address of single group to display.
	<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	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 groups** command is an alternative form of this command. This command does not require a license.

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---

**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
<b>show ip igmp groups</b>	Displays information about the IGMP-attached group membership.



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## show ip igmp snooping

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

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

<b>Syntax Description</b>	<b>vlan <i>vlan-id</i></b> (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093. The default is all VLANs.
---------------------------	---

<b>Defaults</b>	Displays all VLANs.
-----------------	---------------------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>Supported User Roles</b>	network-admin network-operator vdc-admin vdc-operator
-----------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	--

<b>Examples</b>	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)#
```

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## 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		
<b>vpc</b>	Displays event history buffer of type virtual port channel (vPC).	
<b>igmp-snoop-internal</b>	Displays event history buffer of type IGMP snooping internal.	
<b>mfdm</b>	Displays event history buffer of type multicast FIB distribution (MFDM).	
<b>mfdm-sum</b>	Displays event history buffer of type MFDM sum.	
<b>vlan</b>	Displays event history buffer of type VLAN.	
<b>vlan-events</b>	Displays event history buffer of type VLAN events.	

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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)#
```

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Related Commands	Command	Description
	<b>ip igmp snooping event-history</b>	Configures the size of the IGMP snooping event history buffers.
	<b>clear ip igmp snooping event-history</b>	Clears information in the IGMP snooping event history buffers.

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## 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]
```

<b>Syntax Description</b>	<b>vlan <i>vlan-id</i></b> (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
---------------------------	---

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	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 <b>vlan</b> argument optional.

<b>Usage Guidelines</b>	When you use this command without the optional <b>vlan</b> argument, the system displays information for all VLANs.
-------------------------	---

This command does not require a license.

<b>Examples</b>	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)#
```

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

**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.
	4.1(2)	Arguments <i>source</i> and <i>group</i> 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)#
```

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## 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]
```

<b>Syntax Description</b>	<b>vlan <i>vlan-id</i></b> (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
---------------------------	---

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.
	4.1(3)	Changed output to include vPC information.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	--

<b>Examples</b>	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)#
```

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## 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]
```

<b>Syntax Description</b>	<b>vlan <i>vlan-id</i></b> (Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
---------------------------	---

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	--

<b>Examples</b>	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)#
```

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## 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

<b>vlan</b> <i>vlan-id</i>	(Optional) Specifies a VLAN. The range is from 1 to 3967 and 4048 to 4093.
<b>global</b>	(Optional) Specifies the global statistics.

### 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.
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 <b>vlan</b> argument optional and to introduce the optional <b>global</b> 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
```



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```
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/rcv/fail): 11/16/0
  MRD updates (sent/rcv/fail): 0/0/0
```

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## 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	
<i>group</i>	Group address for route.
<i>source</i>	Source address for route.
<b>summary</b>	(Optional) Displays route counts and packet rates.
<b>software-forwarded</b>	(Optional) Displays software-switched route counts only.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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
```

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```
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
<b>show ip mroute summary</b>	Displays summary information about IPv4 multicast routes.

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## 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	
<b>count</b>	(Optional) Displays only route counts.
<b>software-forwarded</b>	(Optional) Displays software-switched route counts only.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.
<i>group</i>	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
```

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```

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
<code>show ip mroute</code>	Displays information about IPv4 multicast routes.

---

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## 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
<i>asn</i>	(Optional) Autonomous systems (AS) number.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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
```

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```

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)#

```

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## 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	Parameter	Description
	<b>errors</b>	Displays events of type error.
	<b>msgs</b>	Displays events of type msg.
	<b>statistics</b>	Displays events of type statistics.

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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 transient 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
```



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```

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 transient 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**

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

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## 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
<i>mesh-group</i>	(Optional) Mesh group name.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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
```

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## 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	
<i>peer-address</i>	(Optional) IP address of an MSDP peer.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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):
```

```
show ip msdp peer
```

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```
Last messaged received: never
SAs: 0/0, SA-Requests: 0/0, SA-Responses: 0/0
Keepalives: 0/0, Notifications: 0/0
switch(config)#
```

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## 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	
<i>peer-address</i>	IP address of the MSDP peer for the SA policy.
<b>in</b>	Specifies the input policy.
<b>out</b>	Specifies the output policy.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.

**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 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 comparisons, 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)#
```

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## 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	
<i>source</i>	Source address for SA cache information.
<i>group</i>	(Optional) Group address for SA cache information.
<i>asn</i>	(Optional) AS number.
<b>peer</b> <i>peer</i>	(Optional) Specifies the IP address of a peer.
<b>detail</b>	(Optional) Displays detailed information.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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** 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
```

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```

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
<b>clear ip msdp route</b>	Clears routes in the MSDP Source-Active cache.
<b>show ip msdp sa-cache</b>	Displays information about the MSDP SA cache.

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## 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		
	<i>rp-address</i>	IP address of the RP.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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)#
```



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## 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	
<i>source</i>	Source address for SA cache information.
<i>group</i>	(Optional) Group address for SA cache information.
<i>asn</i>	(Optional) AS number.
<b>peer</b> <i>peer</i>	(Optional) Specifies the IP address of a peer.
<b>detail</b>	(Optional) Displays detailed information.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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** 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
```

■ **show ip msdp sa-cache**

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```

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
<b>clear ip msdp sa-cache</b>	Clears routes in the MSDP Source-Active cache.
<b>show ip msdp route</b>	Displays information about the MSDP SA cache.

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## 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	Parameter	Description
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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
```

```
show ip msdp sources
```

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```
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)#
```

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## 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	Parameter	Description
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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]
```

<b>Syntax Description</b>	<b>vrf vrf-name</b> (Optional) VRF name.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(3)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	--

<b>Examples</b>	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)
```

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```
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)#
```

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## 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	
<i>rp-or-group</i>	(Optional) RP or group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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)#
```



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## 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

**Supported User Roles**

- 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
	<b>clear ip pim event-history</b>	Clears the contents of the PIM event history buffers.
	<b>ip pim event-history</b>	Configures the size of PIM event history buffers.

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## 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	
<i>group</i>	(Optional) Group address.
<i>vrf</i>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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		
<b>brief</b>	(Optional) Specifies a brief format for display.	
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	Specifies all VRFs.	
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.	
<i>if-number</i>	(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

**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 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
```

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```
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 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)#
```

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## 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		
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.	
<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.	
<i>neighbor-addr</i>	(Optional) IP address of a neighbor.	
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	Specifies all VRFs.	

**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 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-
                  Priority          Capable
2.1.1.2           Ethernet2/2        07:53:06 00:01:40  1          yes
switch(config)#
```

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## 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
<i>group</i>	Group address.
<i>source</i>	(Optional) Source address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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.
	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)#
```

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## 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	
<b>rp-candidate-policy</b>	Specifies candidate-RP messages.
<b>mapping-agent-policy</b>	Specifies mapping agent messages.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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 comparisons, 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)#
```

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## 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		
	<b>bsr-policy</b>	Specifies BSR messages.
	<b>rp-candidate-policy</b>	Specifies candidate-RP messages.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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 comparisons, 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)#
```



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## 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	<i>if-type</i>	Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	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

**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 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 comparisons, 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)#
```

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## 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		
	<i>if-type</i>	Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	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)#
```

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## 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

<b>register-policy</b>	Displays statistics for the register policy.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

### 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 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 comparisons, 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)#
```

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## 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	
<i>source</i>	Source address.
<i>group</i>	Group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

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 requires the Enterprise Services license.

Examples	
	<p>This example shows how to display PIM routes:</p> <pre>switch(config)# <b>show ip pim route 224.1.1.1</b> 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</pre>

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```
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)#
```

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## 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
<i>group</i>	(Optional) Group address.
<i>vrf</i>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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		
	<i>group</i>	Group address for RP lookup.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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	Parameter	Description
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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.
	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
```



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```
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)#
```

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## 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	
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles**

- 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 PIM by VRF:

```
switch(config)# show ip pim vrf
```

```
switch(config)#
```

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## 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	
<b>icmp</b>	(Optional) Specifies ICMPv6 commands.
<i>source</i>	IPv6 source address.
<i>group</i>	(Optional) IPv6 multicast group address.
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	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
```

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```
(*, 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)#
```

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## 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	Parameter	Description
	<b>icmp</b>	(Optional) Specifies ICMPv6 commands.
	<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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
```

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```
(*, 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)#
```

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## 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	
<i>group</i>	Group address for route.
<i>source</i>	Source address for route.
<b>summary</b>	(Optional) Displays route counts and packet rates.
<b>software-forwarded</b>	(Optional) Displays software-switched route counts only.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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

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---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show ipv6 mroute summary</b>	Displays summary information about IPv6 multicast routes.

---



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## 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	Parameter	Description
	<b>count</b>	(Optional) Displays only route counts.
	<b>software-forwarded</b>	(Optional) Displays software-switched route counts only.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.
	<i>group</i>	Specifies a group address for a route.

**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 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
```

**show ipv6 mroute summary*****Send document comments to [nexus7k-feedback-doc@cisco.com](mailto:nexus7k-feedback-doc@cisco.com)***

```
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**

<b>Command</b>	<b>Description</b>
<b>show ipv6 mroute</b>	Displays information about IPv6 multicast routes.

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## 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	
<i>rp-or-group</i>	(Optional) RP or group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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	Parameter	Description
	<b>errors</b>	Displays events of type error.
	<b>msgs</b>	Displays events of type msg.
	<b>statistics</b>	Displays events of type statistics.

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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
	<b>clear ipv6 pim event-history</b>	Clears the contents of the PIM6 event history buffers.
	<b>ipv6 pim event-history</b>	Configures the size of PIM6 event history buffers.

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## 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	
<i>group</i>	(Optional) Group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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)#
```

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## 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	Parameter	Description
	<b>brief</b>	(Optional) Specifies a brief format for display.
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.
	<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	(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

**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 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
```

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```
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)#
```

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## 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		
<i>if-type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.	
<i>if-number</i>	(Optional) Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.	
<i>neighbor-addr</i>	(Optional) IPv6 address of a neighbor.	
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	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)#
```



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## 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		
<i>group</i>		Group address.
<i>source</i>		(Optional) Source address.
<b>vrf</b>		(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>		VRF name.
<b>all</b>		Specifies all VRFs.

**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 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`

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## 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		
	<i>if-type</i>	Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	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 comparisons, M: No. of matches

route-map rmap1 permit 10
  match ipv6 multicast group ffile::/128                               C: 0      M: 0

Total accept count for policy: 2
Total reject count for policy: 0
switch(config)#
```

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## 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	<i>if-type</i>	Interface type. For more information, use the question mark (?) online help function.
	<i>if-number</i>	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

**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 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 comparisons, 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)#
```

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## 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	
<i>source</i>	Source address.
<i>group</i>	Group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

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 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)#
```

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## 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	
<i>group</i>	(Optional) Group address.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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:
      ffile:abcd:def1::/96
switch(config)#
```

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## 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	
<i>group</i>	Group address for the RP lookup.
<i>vrf</i>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

**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 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 ffile::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)#
```

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## 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	Parameter	Description
	<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
	<i>vrf-name</i>	VRF name.
	<b>all</b>	Specifies all VRFs.

**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 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
```

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```
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)#
```



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## 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

<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.

### Defaults

None

### Command Modes

Any command mode

### Supported User Roles

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)#
```

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

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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 transient thread
```

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```

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
<b>ip routing multicast event-history</b>	Configures the size of the IPv4 MRIB event history buffers.
<b>clear ip routing multicast event-history</b>	Clears information in the IPv4 MRIB event history buffers.

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## 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		
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.	
<i>vrf-name</i>	VRF name.	
<b>all</b>	Specifies all VRFs.	
<i>source</i>	Source address for routes.	
<i>group</i>	Group address for routes.	

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>Supported User Roles</b>	network-admin network-operator vdc-admin vdc-operator
-----------------------------	--

Command History	Release	Modification
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	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)#
```

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## 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*]

<b>Syntax Description</b>	<i>client-name</i> (Optional) One of the following multicast routing client names: <ul style="list-style-type: none"> <li>• m6rib</li> <li>• icmpv6</li> <li>• ipv6</li> <li>• static</li> <li>• pim6</li> </ul>
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

Command History	Release	Modification
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	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
```

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```
Delete route requests:      rcvd 0, ack sent 0, ack fail 0
switch(config)#
```

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

**Defaults** None

**Command Modes** Any command mode

**Supported User Roles** 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 transient thread

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```

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
<b>ipv6 routing multicast event-history</b>	Configures the size of the IPv6 M6RIB event history buffers.
<b>clear ipv6 routing multicast event-history</b>	Clears information in the IPv6 M6RIB event history buffers.

---



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## 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	
<b>ip</b>	(Optional) Specifies IPv4 routes.
<b>ipv4</b>	(Optional) Specifies IPv4 routes.
<b>vrf</b>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<i>vrf-name</i>	VRF name.
<b>all</b>	Specifies all VRFs.
<i>source</i>	Source address for routes.
<i>group</i>	Group address for routes.

**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 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)#
```

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## 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	
<b>ip</b>	(Optional) Specifies IPv4 multicast clients.
<b>ipv4</b>	(Optional) Specifies IPv4 multicast clients.
<i>client-name</i>	(Optional) One of the following multicast routing client names: <ul style="list-style-type: none"> <li>• mrib</li> <li>• igmp</li> <li>• static</li> <li>• msdp</li> <li>• ip</li> <li>• pim</li> </ul>

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 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
```

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```
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)#
```

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## 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**]

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.1(2)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	This example shows how to display information about the IGMP running-system configuration:
-----------------	--

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

```
switch(config)#
```

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## 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]**

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	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)#
```

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## 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]**

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	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
```

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```
ip pim dr-priority 5
ip pim hello-authentication ah-md5 3 78c3e5487bde5df
ip pim neighbor-policy my_neighbor_policy

interface Ethernet2/12
  ip pim sparse-mode

switch(config)#
```

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## 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:0000:0000:0001 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 2222

switch(config)#
```



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## 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]
```

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.1(2)	This command was introduced.

<b>Usage Guidelines</b>	This command requires the Enterprise Services license.
-------------------------	--

<b>Examples</b>	This example shows how to display information about the IGMP startup-system configuration:
-----------------	--

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

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## 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]**

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	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)#
```

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## 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**]

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	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
```

```
show startup-config pim
```

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```
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)#
```

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## 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]**

<b>Syntax Description</b>	<b>all</b> (Optional) Displays configured and default information.
---------------------------	--

<b>Defaults</b>	None
-----------------	------

<b>Command Modes</b>	Any command mode
----------------------	------------------

<b>SupportedUserRoles</b>	network-admin network-operator vdc-admin vdc-operator
---------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	4.0(1)	This command was introduced.

<b>Usage Guidelines</b>	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:0000:0000:0001 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

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