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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 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

**SupportedUserRoles** network-admin  
network-operator  
vdc-admin  
vdc-operator

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

**Usage Guidelines** The **show ip igmp route** command is an alternative form of this command. This command does not require a license.

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**Examples**

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

```
switch(config)# show ip igmp groups
IGMP Connected Group Membership for Context "default" - 2 total entries
Type: S - Static, D - Dynamic, L - Local, T - SSM Translated
Group Address      Type Interface      Uptime    Expires    Last Reporter
224.1.1.1          L    GigabitEthernet2/8  00:00:04  00:04:15  1.0.8.3
224.1.1.2          L    GigabitEthernet2/8  00:00:02  00:04:17  1.0.8.3
switch(config)#
```

---

**Related Commands**

Command	Description
<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

**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 on an interface:

```
switch(config)# show ip igmp interface ethernet 2/11
IGMP Interfaces for VRF "default"
Ethernet2/11, Interface status: protocol-down/link-down/admin-down
  IP address: none
  Active querier: 0.0.0.0, version: ?, next query sent in: 0.000000
  Membership count: 0
  IGMP version: 2, host version: 0
  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
```

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```
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: 2
IGMP Report Policy: None
IGMP State Limit: None
IGMP interface statistics:
  General (sent/received):
    v1-reports: 0/0
    v2-queries: 0/0, v2-reports: 0/0, v2-leaves: 0/0
    v3-queries: 0/0, v3-reports: 0/0
  Errors:
    Checksum errors: 0, Packet length errors: 0
    Bogus source IPs: 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
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
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<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 does not require a license.
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<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 explicit-tracking

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

**show ip igmp snooping explicit-tracking vlan** *vlan-id*

<b>Syntax Description</b>	<b>vlan</b> <i>vlan-id</i> 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 explicit tracking for IGMP snooping:
-----------------	--

```
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 [vlan vlan-id] [detail]
```

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>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.

**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.

<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
Vlan Router-port Type Uptime Expires
1 Eth8/20 D 00:01:09 00:04:50
1 Eth8/9 D 00:01:09 00:04:56
1 Po4 D 00:01:03 00:04:56
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 vlan

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

**show ip igmp snooping statistics vlan** *vlan-id*

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

Defaults	None
----------	------

Command Modes	Any command mode
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SupportedUserRoles	network-admin network-operator vdc-admin vdc-operator
--------------------	--

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

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

Examples	This example shows how to display information about IGMP snooping statistics:
----------	---

```
switch(config)# show ip igmp snooping statistics vlan 1
Global IGMP snooping statistics:
  Packets received: 0
  Packet errors: 0
  Packets for non-snooped vlans : 0
  Packets flooded: 0
VLAN 1 IGMP snooping statistics, last reset: never
  Packets received: 0
  IGMPv1 reports received: 0
  IGMPv2 reports received: 0
  IGMPv3 reports received: 0
  IGMPv1 queries received: 0
  IGMPv2 queries received: 0
  IGMPv3 queries received: 0
  PIM Hellos received: 0
  Invalid reports received: 0
  Invalid queries received: 0
  Report version mismatch: 0
  Unknown packets received: 0
  Queries originated: 0
```

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```
Reports originated: 0  
Packets sent to routers: 0  
STP TCN received: 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)#
```

---

**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

**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 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.
<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 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 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
```

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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 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	
<code>group</code>	(Optional) Group address.
<code>vrf</code>	(Optional) Applies to a virtual routing and forwarding (VRF) instance.
<code>vrf-name</code>	VRF name.
<code>all</code>	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	

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-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.

**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):
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

**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 neighbor-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 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>	Show statistics for 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** This example shows how to display PIM routes:

```
switch(config)# show ip pim route 224.1.1.1
PIM Routing Table for VRF "default" - 6 entries

(*, 224.0.0.0/4), RP 1.1.1.1*, bidir, expires 00:00:59, RP-bit
  Incoming interface: loopback4, RPF nbr 1.1.1.1
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 1, JP-holdtime round-up: 3

(*, 225.0.0.1/32), RP 1.1.1.1*, bidir, expires 0.000000 (00:00:06), RP-bit
  Incoming interface: loopback4, RPF nbr 1.1.1.1
  Oif-list: (0) 00000000, timeout-list: (0) 00000000
  Timeout-interval: 1, JP-holdtime round-up: 3

(*, 225.0.1.1/32), RP 1.1.1.1*, bidir, expires 0.000000 (00:00:06), RP-bit
```

```
show ip pim route
```

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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.
<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 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.
<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 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.

**Usage Guidelines** This command requires the Enterprise Services license.

**Examples** This example shows how to display information about PIM statistics:

```
switch(config)# show ip pim statistics
PIM Hash Information for VRF "default"
Hash function used for BSR-learned RPs only
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):
```

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```
Auto-RP Announces: 0/0, Auto-RP Discoveries: 0/0
Auto-RP RPF failed: 0, Auto-RP from border interfaces: 0
Auto-RP invalid type: 0, Auto-RP TTL expired: 0
Auto-RP received but not listen configured: 0
General errors:
Control-plane RPF failure due to no route found: 1
Data-plane RPF failure due to no route found: 0
Data-plane no multicast state found: 0
Data-plane create route state count: 0
switch(config)#
```

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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		
<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
```

```
show ipv6 mld local-groups
```

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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-docfeedback@cisco.com](mailto:nexus7k-docfeedback@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**

Command	Description
<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 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.
<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 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		
<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

**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 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)#
```

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

**Defaults** None

**Command Modes** Any command mode

**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 jp-policy ethernet 2/2
C: No. of comparisons, M: No. of matches

route-map rmap1 permit 10
  match ipv6 multicast group ff1e::/128                C: 0      M: 0

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

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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

**SupportedUserRoles** network-admin  
network-operator  
vdc-admin  
vdc-operator

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

**Usage Guidelines** This command requires the Enterprise Services license.

**Examples** This example shows how to display information about PIM6 policy statistics:

```
switch(config)# show ipv6 pim policy statistics neighbor-policy ethernet 2/2
C: No. of comparisons, M: No. of matches

route-map rmap2 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 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.
<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 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.
<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 RP-hash values:

```
switch(config)# show ipv6 pim rp-hash
PIM6 Hash Information for VRF "default"
PIM6 RPs for group ffl::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 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.	

Defaults	
None	

Command Modes	
Any command mode	

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

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

Usage Guidelines	
This command requires the Enterprise Services license.	

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

```
switch(config)# show routing ipv6 multicast
IPv6 Multicast Routing Table for VRF "default"
switch(config)#
```

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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
---------------------------	--

<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 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 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 msdp

To display information about the running-system configuration for Multicast Source Discovery Protocol (MSDP), use the **show running-config msdp** command.

**show running-config msdp [all]**

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

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

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

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

Usage Guidelines	This command requires the Enterprise Services license.
------------------	--

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

```
switch(config)# show running-config msdp
version 4.0(3)
feature msdp
ip msdp originator-id loopback0
ip msdp peer 192.168.1.10 connect-source Ethernet2/11 remote-as 8
ip msdp sa-interval 88
ip msdp reconnect-interval 20
ip msdp group-limit 3 source 172.1.0.0/16
ip msdp group-limit 4000 source 192.168.1.0/24
ip msdp group-limit 4096 source 192.168.1.1/32
ip msdp flush-routes
ip msdp description 192.168.1.10 engineering peer
ip msdp keepalive 192.168.1.10 10 20
ip msdp sa-policy 192.168.1.10 my_sa_policy in
ip msdp mesh-group 192.168.1.10 my_mesh_group

switch(config)#
```

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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]**

<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 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 22222

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.
-------------------------	--

<b>Examples</b>	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
```

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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 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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