Show Commands

IGMP Commands

group

Syntax **group** [*grp-ip-address*]
group summary

Context show>router>igmp

Description This command displays the multicast group and (S,G) addresses. If no *grp-ip-address* parameters are specified, then all IGMP group, (*,G) and (S,G) addresses are displayed.

Parameters *grp-ip-address* — Displays specific multicast group addresses.

Output **IGMP Group Output —** The following table describes the output fields for IGMP group information.

Label	Description
IGMP Groups	Displays the IP multicast sources corresponding to the IP multicast groups that are statically configured.
Fwd List	Displays the list of interfaces in the forward list.
Blk List	Displays the list of interfaces in the bulk list.

Sample Output

```
*B:Dut-C# show router igmp group
===============================================================================
IGMP Interface Groups
===============================================================================
===============================================================================
IGMP Host Groups
===============================================================================
(*,225.0.0.1)
    Fwd List  : 112.112.1.2            Up Time : 0d 00:00:21
(11.11.0.1,225.0.0.1)
    Fwd List  : 112.112.1.1            Up Time : 0d 00:00:30
    Blk List  : 112.112.1.2            Up Time : 0d 00:00:21
(11.11.0.2,225.0.0.1)
    Fwd List  : 112.112.1.1            Up Time : 0d 00:00:30
(*,225.0.0.2)
    Fwd List  : 112.112.1.2            Up Time : 0d 00:00:21
(11.11.0.1,225.0.0.2)
    Blk List  : 112.112.1.2            Up Time : 0d 00:00:21
-------------------------------------------------------------------------------
(*,G)/(S,G) Entries : 5
===============================================================================
```

```
*B:Dut-C#

*B:Dut-C# show router igmp group summary
===============================================================================
IGMP Interface Groups
===============================================================================
===============================================================================
IGMP Host Groups Summary          Nbr Fwd Hosts          Nbr Blk Hosts
===============================================================================
(*,225.0.0.1)                     1                      0
(11.11.0.1,225.0.0.1)             1                      1
(11.11.0.2,225.0.0.1)             1                      0
(*,225.0.0.2)                     1                      0
(11.11.0.1,225.0.0.2)             0                      1
-------------------------------------------------------------------------------
(*,G)/(S,G) Entries : 5
===============================================================================
*B:Dut-C#

A:NYC# show router igmp group 224.24.24.24
===============================================================================
IGMP Groups
===============================================================================
(*,224.24.24.24)                      Up Time : 0d 05:23:23
    Fwd List  : nyc-vlc
-------------------------------------------------------------------------------
(*,G)/(S,G) Entries : 1
===============================================================================
A:NYC#
```

hosts

Syntax **hosts** [**group** *grp-address*] [**detail**] [**fwd-service** *service-id*] [**grp-interface** *ip-int-name*]
hosts [**host** *ip-address*] [**group** *grp-address*] [**detail**]
hosts summary

Context show>router>igmp

Description This command shows IGMP hosts information.

Parameters *grp-address* — Group IP address in format: a.b.c.d

service-id — [1..2148007978]|<svc-name: 64 characters maximum>

ip-int-name — IP interface name. A string up to 32 characters.

ip-address — IP address in format: a.b.c.d

Sample Output

```
*B:Dut-C# show router igmp hosts
===============================================================================
IGMP Hosts
===============================================================================
Host            Oper    Oper    Fwd   GrpItf           Num    Subscriber
```

```
                State   Version Svc                     Groups
-------------------------------------------------------------------------------
112.112.1.1     Up      3       1     gi_1_1            1      sub_1
112.112.1.2     Up      3       1     gi_1_1            2      sub_1
112.112.1.3     Up      3       1     gi_1_2            0      sub_2
-------------------------------------------------------------------------------
Hosts : 3
===============================================================================
*B:Dut-C#


*B:Dut-C# show router igmp hosts detail
===============================================================================
IGMP Host 112.112.1.1
===============================================================================
Oper Status      : Up         MacAddress     : 00:00:00:00:00:01
Oper version     : 3          Subscriber     : sub_1
Num Groups       : 1          GrpItf         : gi_1_1
Max Grps Till Now: 2          IGMP-Policy    : pol1
PPPoE SessionId  : 1          Next query time: 0d 00:02:03
FwdSvcId         : 1
-------------------------------------------------------------------------------
IGMP Group
-------------------------------------------------------------------------------
Group Address    : 225.0.0.1      Up Time    : 0d 00:00:24
Expires          : Not running    Mode       : Include
V1 Host Timer    : Not running    Type       : Dynamic
V2 Host Timer    : Not running    Compat Mode: IGMP Version 3
Redir.vRtrId     : N/A            Redir.Intf : N/A
-------------------------------------------------------------
Source Address     Expires        Type         Fwd/Blk
-------------------------------------------------------------
11.11.0.1          0d 00:03:56    Dynamic      Fwd
11.11.0.2          0d 00:03:56    Dynamic      Fwd
===============================================================================
IGMP Host 112.112.1.2
===============================================================================
Oper Status      : Up         MacAddress     : 00:00:00:00:00:01
Oper version     : 3          Subscriber     : sub_1
Num Groups       : 2          GrpItf         : gi_1_1
Max Grps Till Now: 2          IGMP-Policy    : pol1
PPPoE SessionId  : 2          Next query time: 0d 00:02:03
FwdSvcId         : 1
-------------------------------------------------------------------------------
IGMP Group
-------------------------------------------------------------------------------
Group Address    : 225.0.0.1      Up Time    : 0d 00:00:16
Expires          : 0d 00:04:05    Mode       : Exclude
V1 Host Timer    : Not running    Type       : Dynamic
V2 Host Timer    : Not running    Compat Mode: IGMP Version 3
Redir.vRtrId     : N/A            Redir.Intf : N/A
-------------------------------------------------------------
Source Address     Expires        Type         Fwd/Blk
-------------------------------------------------------------
11.11.0.1          0d 00:00:00    Dynamic      Blk
-------------------------------------------------------------------------------
IGMP Group
-------------------------------------------------------------------------------
Group Address    : 225.0.0.2      Up Time    : 0d 00:00:16
```

```
Expires          : 0d 00:04:04    Mode       : Exclude
V1 Host Timer    : Not running    Type       : Dynamic
V2 Host Timer    : Not running    Compat Mode: IGMP Version 3
Redir.vRtrId     : N/A            Redir.Intf : N/A
-------------------------------------------------------------
Source Address     Expires        Type         Fwd/Blk
-------------------------------------------------------------
11.11.0.1          0d 00:00:00    Dynamic      Blk
===============================================================================
IGMP Host 112.112.1.3
===============================================================================
Oper Status      : Up         MacAddress     : 00:00:00:00:00:02
Oper version     : 3          Subscriber     : sub_2
Num Groups       : 0          GrpItf         : gi_1_2
Max Grps Till Now: 1          IGMP-Policy    : pol1
PPPoE SessionId  : 1          Next query time: 0d 00:00:48
FwdSvcId         : 1
-------------------------------------------------------------------------------
Hosts : 3
===============================================================================
*B:Dut-C#


*B:Dut-C# show router igmp statistics host 112.112.1.1
=================================================
IGMP Host Statistics 112.112.1.1
=================================================
Message Type        Received       Transmitted
-------------------------------------------------
Queries             0              580
Report V1           0              0
Report V2           0              0
Report V3           5              0
Leaves              0              0
-------------------------------------------------------------------------------
General Host Statistics
-------------------------------------------------------------------------------
Bad Length        : 0
Bad Checksum      : 0
Unknown Type      : 0
Bad Receive If    : 0
Rx Non Local      : 0
Rx Wrong Version  : 0
Policy Drops      : 0
No Router Alert   : 0
Rx Bad Encodings  : 0
Local Scope Pkts  : 0
Resvd Scope Pkts  : 0
MCAC Policy Drops : 0
-------------------------------------------------------------------------------
Source Group Statistics
-------------------------------------------------------------------------------
(S,G)             : 0
(*,G)             : 0
=================================================
*B:Dut-C# show subscriber-mgmt igmp-policy
```

ssm-translate

Syntax **ssm-translate**
ssm-translate interface *interface-name*

Context show>router>igmp

Description This command displays IGMP SSM translate configuration information.

Parameters *interface-name* — IP interface name. A string up to 32 characters.

Output **GMP Interface Output —** The following table provides IGMP field descriptions.

Label	Description
Group Range	Displays the address ranges of the multicast groups for which this router can be an RP.
Source	Displays the unicast address that sends data on an interface.
SSM Translate Entries	Displays the total number of SSM translate entries.

Sample Output

```
===============================================================
IGMP SSM Translate Entries
===============================================================
Group Range               Source                    Interface
---------------------------------------------------------------
<234.1.1.1 - 234.1.1.2>   100.1.1.1                    -
<232.1.1.1 - 232.1.1.5>   100.1.1.2                    ies-abc
---------------------------------------------------------------
```

interface

Syntax **interface** [*ip-int-name* | *ip-address*] [**group**] [*grp-address*] [**detail**]

Context show>router>igmp

Description This command displays IGMP interface information.

Parameters *ip-int-name* — Only displays the information associated with the specified IP interface name.

ip-address — Only displays the information associated with the specified IP address.

group *grp-address* — Only displays IP multicast group address for which this entry contains information.

detail — Displays detailed IP interface information along with the source group information learned on that interface.

Output **IGMP Interface Output —** The following table provides IGMP field descriptions.

Label	Description
Interface	Specifies the interfaces that participate in the IGMP protocol.
Adm Admin Status	Displays the administrative state for the IGMP protocol on this interface.
Oper Oper Status	Displays the current operational state of IGMP protocol on the interface.
Querier	Displays the address of the IGMP querier on the IP subnet to which the interface is attached.
Querier Up Time	Displays the time since the querier was last elected as querier.
Querier Expiry Timer	Displays the time remaining before the querier ages out. If the querier is the local interface address, the value will be zero.
Cfg/Opr Version Admin/Oper version	Cfg – The configured version of IGMP running on this interface. For IGMP to function correctly, all routers on a LAN must be configured to run the same version of IGMP on that LAN. Opr – The operational version of IGMP running on this interface. If the cfg value is 3 but all of the routers in the local subnet of this interface use IGMP version v1 or v2, the operational version will be v1 or v2.
Num Groups	The number of multicast groups which have been learned by the router on the interface.
Policy	Specifies the policy that is to be applied on the interface.
Group Address	Specifies the IP multicast group address for which this entry contains information.
Up Time	Specifies the time since this source group entry got created.
Last Reporter	Specifies the IP address of the source of the last membership report received for this IP Multicast group address on this interface. If no membership report has been received, this object has the value 0.0.0.0.
Mode	The mode is based on the type of membership report(s) received on the interface for the group. In the 'include' mode, reception of packets sent to the specified multicast address is requested only from those IP source addresses listed in the source-list parameter of the IGMP membership report. In 'exclude' mode, reception of packets sent to the given multicast address is requested from all IP source addresses except those listed in the source-list parameter.

Label	Description (Continued)
V1 Host Timer	The time remaining until the local router will assume that there are no longer any IGMP version 1 members on the IP subnet attached to this interface. Upon hearing any IGMPv1 Membership Report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv2 Leave messages for this group that it receives on this interface.
V2 Host Timer	The time remaining until the local router will assume that there are no longer any IGMP version 2 members on the IP subnet attached to this interface. Upon hearing any IGMPv2 Membership Report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv3 Leave messages for this group that it receives on this interface.
Type	Indicates how this group entry was learned. If this group entry was learned by IGMP, it will be set to “dynamic”. For statically configured groups, the value will be set to 'static'.
Compat Mode	Used in order for routers to be compatible with older version routers. IGMPv3 hosts MUST operate in version 1 and version 2 compatibility modes. IGMPv3 hosts MUST keep state per local interface regarding the compatibility mode of each attached network. A host's compatibility mode is determined from the Host Compatibility Mode variable which can be in one of three states: IGMPv1, IGMPv2 or IGMPv3. This variable is kept per interface and is dependent on the version of General Queries heard on that interface as well as the Older Version Querier Present timers for the interface.

Sample Output

```
*A:ALA-BA# show router 100 interface
===============================================================================
Interface Table (Service: 100)
===============================================================================
Interface-Name                   Adm          Opr(v4/v6)  Mode    Port/SapId
   IP-Address                                                    PfxState
-------------------------------------------------------------------------------
IGMP_to_CE                       Up           Up          VPRN    1/1/7
   11.1.1.1/24                                                   n/a
system                           Up           Up          VPRN    loopback
   10.20.1.2/32                                                  n/a
-------------------------------------------------------------------------------
Interfaces : 2
===============================================================================
*A:ALA-BA#

*A:ALA-BA# show router 100 interface IGMP_to_CE
===============================================================================
Interface Table (Service: 100)
===============================================================================
Interface-Name                   Adm          Opr(v4/v6)  Mode    Port/SapId
```

```
   IP-Address                                                        PfxState
-------------------------------------------------------------------------------
IGMP_to_CE                       Up          Up          VPRN     1/1/7
   11.1.1.1/24                                                     n/a
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#


*A:ALA-BA# show router 100 igmp interface
===============================================================================
IGMP Interfaces
===============================================================================
Interface               Adm  Oper Querier         Cfg/Opr Num     Policy
                                                  Version Groups
-------------------------------------------------------------------------------
IGMP_to_CE              Up   Up   11.1.1.1        1/1     3       igmppol
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#


*A:ALA-BA# show router 100 igmp interface IGMP_to_CE
===============================================================================
IGMP Interface IGMP_to_CE
===============================================================================
Interface               Adm  Oper Querier         Cfg/Opr Num     Policy
                                                  Version Groups
-------------------------------------------------------------------------------
IGMP_to_CE              Up   Up   11.1.1.1        1/1     3       igmppol
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface 11.1.1.1
===============================================================================
IGMP Interface 11.1.1.1
===============================================================================
Interface               Adm  Oper Querier         Cfg/Opr Num     Policy
                                                  Version Groups
-------------------------------------------------------------------------------
IGMP_to_CE              Up   Up   11.1.1.1        1/1     3       igmppol
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#
```

```
*A:ALA-BA# show router 100 igmp interface IGMP_to_CE group 227.1.1.1
===============================================================================
IGMP Interface IGMP_to_CE
===============================================================================
Interface               Adm  Oper Querier         Cfg/Opr Num     Policy
                                                  Version Groups
-------------------------------------------------------------------------------
IGMP_to_CE              Up   Up   11.1.1.1        1/1     3       igmppol
-------------------------------------------------------------------------------
IGMP Group
-------------------------------------------------------------------------------
Group Address : 227.1.1.1               Up Time       : 0d 00:03:52
Interface     : IGMP_to_CE              Expires       : never
Last Reporter : 0.0.0.0                 Mode          : exclude
V1 Host Timer : Not running             Type          : static
V2 Host Timer : Not running             Compat Mode   : IGMP Version 3
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#


*A:ALA-BA# show router 100 igmp interface IGMP_to_CE group 227.1.1.1 detail
===============================================================================
IGMP Interface IGMP_to_CE
===============================================================================
Interface          : IGMP_to_CE
Admin Status       : Up                 Oper Status        : Up
Querier            : 11.1.1.1           Querier Up Time    : 0d 00:04:01
Querier Expiry Time: N/A                Time for next query: 0d 00:13:42
Admin/Oper version : 1/1                Num Groups         : 3
Policy             : igmppol            Subnet Check       : Disabled
Max Groups Allowed : 16000              Max Groups Till Now: 3
MCAC Policy Name   :                    MCAC Const Adm St  : Enable
MCAC Max Unconst BW: no limit           MCAC Max Mand BW   : no limit
MCAC In use Mand BW: 0                  MCAC Avail Mand BW : unlimited
MCAC In use Opnl BW: 0                  MCAC Avail Opnl BW : unlimited
-------------------------------------------------------------------------------
IGMP Group
-------------------------------------------------------------------------------
Group Address : 227.1.1.1               Up Time       : 0d 00:04:02
Interface     : IGMP_to_CE              Expires       : never
Last Reporter : 0.0.0.0                 Mode          : exclude
V1 Host Timer : Not running             Type          : static
V2 Host Timer : Not running             Compat Mode   : IGMP Version 3
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:ALA-BA#
```

static

Syntax **static** [*ip-int-name* | *ip-addr*]

Context show>router>igmp

Description This command displays static IGMP, (*,G) and (S,G) information.

Parameters *ip-int-name* — Only displays the information associated with the specified IP interface name.

ip-addr — Only displays the information associated with the specified IP address.

Output **Static IGMP Output —** The following table provides static IGMP field descriptions.

Label	Description
Source	Displays entries which represents a source address from which receivers are interested/not interested in receiving multicast traffic.
Group	Displays the IP multicast group address for which this entry contains information.
Interface	Displays the interface name.

Sample Output

```
*A:ALA-BA# show router 100 igmp static
===============================================================================
IGMP Static Group Source
===============================================================================
Source           Group            Interface
-------------------------------------------------------------------------------
11.11.11.11      226.136.22.3     IGMP_to_CE
*                227.1.1.1        IGMP_to_CE
22.22.22.22      239.255.255.255  IGMP_to_CE
-------------------------------------------------------------------------------
Static (*,G)/(S,G) Entries : 3
===============================================================================
*A:ALA-BA#
```

statistics

Syntax **statistics** [*ip-int-name* | *ip-addr*ess]
statistics host [*ip-addr*ess]

Context show>router>igmp

Description This command displays IGMP statistics information.

Parameters *ip-int-name* — Only displays the information associated with the specified IP interface name.

ip-address — Only displays the information associated with the specified IP address.

Output **IGMP Statistics Output —** The following table provides statistical IGMP field descriptions.

Label	Description
IGMP Interface Statistics	The section listing the IGMP statistics for a particular interface.
Message Type	Queries — The number of IGMP general queries transmitted or received on this interface. Report — The total number of IGMP V1, V2, or V3 reports transmitted or received on this interface. Leaves — The total number of IGMP leaves transmitted on this interface.
Received	Displays the total number of IGMP packets received on this interface.
Transmitted	Column that displays the total number of IGMP packets transmitted from this interface.
General Interface Statistics	The section listing the general IGMP statistics.
Bad Length	Displays the total number of IGMP packets with bad length received on this interface.
Bad Checksum	Displays the total number of IGMP packets with bad checksum received on this interface.
Unknown Type	Displays the total number of IGMP packets with unknown type received on this interface.
Bad Receive If	Displays the total number of IGMP packets incorrectly received on this interface.
Rx Non Local	Displays the total number of IGMP packets received from a non-local sender.
Rx Wrong Version	Displays the total number of IGMP packets with wrong versions received on this interface.
Policy Drops	Displays the total number of times IGMP protocol instance matched the host IP address or group/source addresses specified in the import policy.
No Router Alert	Displays the total number of IGMPv3 packets received on this interface which did not have the router alert flag set.

Sample Output

```
*A:ALA-BA# show router 100 igmp statistics
================================================
IGMP Interface Statistics
================================================
Message Type        Received       Transmitted
------------------------------------------------
Queries             0              5
Report V1           0              0
Report V2           0              0
Report V3           0              0
Leaves              0              0
------------------------------------------------
General Interface Statistics
------------------------------------------------
Bad Length        : 0
Bad Checksum      : 0
Unknown Type      : 0
Bad Receive If    : 0
Rx Non Local      : 0
Rx Wrong Version  : 0
Policy Drops      : 0
No Router Alert   : 0
Rx Bad Encodings  : 0
Rx Pkt Drops      : 0
------------------------------------------------
Source Group Statistics
------------------------------------------------
(S,G)             : 2
(*,G)             : 1
================================================
*A:ALA-BA#


*B:Dut-C# show router igmp statistics host
================================================
IGMP Host Statistics
================================================
Message Type        Received       Transmitted
------------------------------------------------
Queries             0              1739
Report V1           0              0
Report V2           0              0
Report V3           10             0
Leaves              0              0
-------------------------------------------------------------------------------
General Host Statistics
-------------------------------------------------------------------------------
Bad Length        : 0
Bad Checksum      : 0
Unknown Type      : 0
Bad Receive If    : 0
Rx Non Local      : 0
Rx Wrong Version  : 0
Policy Drops      : 0
No Router Alert   : 0
Rx Bad Encodings  : 0
Local Scope Pkts  : 0
```

```
Resvd Scope Pkts  : 0
MCAC Policy Drops : 0
===============================================
*B:Dut-C#
```

status

Syntax **status**

Context show>router>igmp

Description This command displays IGMP status information.
If IGMP is not enabled, the following message appears:

```
A:NYC# show router igmp status
MINOR: CLI IGMP is not configured.
A:NYC#
```

Output **IGMP Status Output —** The following table provides IGMP status field descriptions.

Label	Description
Admin State	Displays the administrative status of IGMP.
Oper State	Displays the current operating state of this IGMP protocol instance on this router.
Query Interval	The frequency at which IGMP query packets are transmitted.
Last Member Query Interval	The maximum response time inserted into group-specific queries sent in response to leave group messages, and is also the amount of time between group-specific query messages.
Query Response Interval	The maximum query response time advertised in IGMPv2 queries.
Robust Count	Displays the number of times the router will retry a query.

Sample Output

```
*A:ALA-BA# show router 100 igmp status
===============================================================================
IGMP Status
===============================================================================
Admin State                     : Up
Oper State                      : Up
Query Interval                  : 1024
Last Member Query Interval      : 1024
Query Response Interval         : 1023
Robust Count                    : 10
===============================================================================
*A:ALA-BA#
```

Show Router PIM Commands

anycast

Syntax **anycast** [**detail**]

Context show>router>pim

Description This command displays PIM anycast rp-set information.

Parameters **detail —** Displays detailed information.

Output **PIM anycast Output —** The following table provides PIM anycast field descriptions

Label	Description
Anycast Address	Displays the candidate anycast address.
Anycast RP Peer	Displays the candidate anycast RP peer address.

Sample Output

```
A:dut-d# show router pim anycast
=====================================================
PIM Anycast RP Entries
=====================================================
Anycast RP               Anycast RP Peer
-----------------------------------------------------
100.100.100.1            102.1.1.1
                         103.1.1.1
                         104.1.1.1
-----------------------------------------------------
PIM Anycast RP Entries : 3
=====================================================
```

crp

Syntax **crp** [*ip-address*]

Context show>router>pim

Description Display PIM candidate RP (CRP) information received at the elected Bootstrap router (BSR).

Parameters *ip-address* — The candidate RP IP address.

Output **PIM CRP Output —** The following table provides PIM CRP field descriptions.

Label	Description
RP Address	Displays the Candidate RP address.
Group Address	Displays the range of multicast group addresses for which the CRP is the Candidate RP.
Priority	Displays the Candidate RP's priority for becoming a rendezvous point (RP). This value is used to elect RP for a group range. A value of 0 is considered as the highest priority.
Holdtime	Displays the hold time of the candidate RP. It is used by the Bootstrap router to time out the RP entries if it does not listen to another CRP advertisement within the holdtime period.
Expiry	The minimum time remaining before the CRP will be declared down. If the local router is not the BSR, this value is 0.
Candidate RPs	Displays the number of CRP entries.

Sample Output

```
A:WAS# show router pim crp
===============================================================================
PIM Candidate RPs
===============================================================================
RP Address      Group Address      Priority    Holdtime  Expiry Time
-------------------------------------------------------------------------------
2.22.187.236    224.0.0.0/4        192         150       0d 00:02:19
2.22.187.239    224.0.0.0/4        192         150       0d 00:02:19
2.22.187.240    224.0.0.0/4        192         150       0d 00:02:09
-------------------------------------------------------------------------------
Candidate RPs : 3
===============================================================================
A:WAS#


A:WAS# show router pim crp 2.22.187.236
===============================================================================
PIM Candidate RPs
===============================================================================
RP Address      Group Address      Priority    Holdtime  Expiry Time
-------------------------------------------------------------------------------
2.22.187.236    224.0.0.0/4        192         150       0d 00:01:43
-------------------------------------------------------------------------------
Candidate RPs : 1
===============================================================================
A:WAS#
```

s-pmsi

Syntax **s-pmsi** [*mdSrcAddr* [*mdGrpAddr*]] [**detail**]

Context show>router>pim

Description Displays the list of selective provider multicast service interfaces that are currently active.

Parameters *mdSrcAddr* — Specifies the source address of the multicast sender.

mdGrpAddr — Specifies the group address of the multicast sender.

detail — Displays detailed output.

Output **PIM data MDT Output —** The following table provides PIM data MDT descriptions.

Label	Description
MD Grp Address	Displays the IP multicast group address for which this entry contains information.
MD Src Address	Displays the source address of the multicast sender. It will be 0 if the type is configured as **starg**. It will be the address of the Rendezvous Point (RP) if the type is configured as **starRP**.
MT Index	Displays the index number.
Num VP SGs	Displays the VPN number.

Sample Output PIM Selective Provider Tunnel

```
*B:node-6# show router 100 pim s-pmsi
===============================================================================
PIM Selective provider tunnels
===============================================================================
MD Src Address        MD Grp Address        MT Index      Num VPN SGs
-------------------------------------------------------------------------------
200.200.200.7         230.0.89.72           24603         1
200.200.200.7         230.0.89.73           24604         1
200.200.200.7         230.0.89.74           24605         1
200.200.200.7         230.0.89.75           24606         1
200.200.200.7         230.0.89.76           24607         1
200.200.200.7         230.0.89.77           24608         1
200.200.200.7         230.0.89.78           24609         1
200.200.200.7         230.0.89.79           24610         1
200.200.200.7         230.0.89.80           24611         1
200.200.200.7         230.0.89.81           24612         1
200.200.200.7         230.0.89.82           24613         1
200.200.200.7         230.0.89.83           24614         1
200.200.200.7         230.0.89.84           24615         1
200.200.200.7         230.0.89.85           24616         1
200.200.200.7         230.0.89.86           24617         1
200.200.200.7         230.0.89.87           24618         1
...
===============================================================================
*B:node-6#
```

Sample Output PIM Selective Provider Tunnel Detail

```
*B:node-6# show router 100 pim s-pmsi detail
===============================================================================
PIM Selective provider tunnels
===============================================================================
Md Source Address  : 200.200.200.7      Md Group Address   : 230.0.89.72
Number of VPN SGs  : 1                  Uptime             : 0d 00:00:18
MT IfIndex         : 24603              Egress Fwding Rate : 163.2 kbps

VPN Group Address  : 228.1.0.0          VPN Source Address : 11.2.102.1
State              : RX Joined
Expiry Timer       : 0d 00:02:41
===============================================================================
PIM Selective provider tunnels
===============================================================================
Md Source Address  : 200.200.200.7      Md Group Address   : 230.0.89.73
Number of VPN SGs  : 1                  Uptime             : 0d 00:00:18
MT IfIndex         : 24604              Egress Fwding Rate : 163.2 kbps

VPN Group Address  : 228.1.0.1          VPN Source Address : 11.2.102.1
State              : RX Joined
Expiry Timer       : 0d 00:02:41
===============================================================================
PIM Selective provider tunnels
===============================================================================
Md Source Address  : 200.200.200.7      Md Group Address   : 230.0.89.74
Number of VPN SGs  : 1                  Uptime             : 0d 00:00:20
MT IfIndex         : 24605              Egress Fwding Rate : 165.7 kbps

VPN Group Address  : 228.1.0.2          VPN Source Address : 11.2.102.1
State              : RX Joined
Expiry Timer       : 0d 00:02:39
===============================================================================
PIM Selective provider tunnels
===============================================================================
Md Source Address  : 200.200.200.7      Md Group Address   : 230.0.89.75
Number of VPN SGs  : 1                  Uptime             : 0d 00:00:20
MT IfIndex         : 24606              Egress Fwding Rate : 165.7 kbps

VPN Group Address  : 228.1.0.3          VPN Source Address : 11.2.102.1
State              : RX Joined
Expiry Timer       : 0d 00:02:39
===============================================================================
*B:node-6#
```

Sample Output RX Tracking for RSVP S-PMSI Tunnel

```
*A:Dut-C# show router 1 pim s-pmsi

===============================================================================
PIM RSVP Spmsi tunnels
===============================================================================
P2mp ID   Tunnel ID   Ext Tunnel Adrs       SPMSI Index   Num VPN    State
                                                          SGs
-------------------------------------------------------------------------------
```

```
0         0           10.20.1.4             1030144       1         RX Tracking
0         0           10.20.1.4             1030144       1         RX Tracking
===============================================================================
PIM RSVP Spmsi Interfaces : 2
===============================================================================
*A:Dut-C# show router 21 pim s-pmsi

===============================================================================
PIM LDP Spmsi tunnels
===============================================================================
Lsp ID    Root Addr             SPMSI Index   Num VPN    State
                                              SGs
-------------------------------------------------------------------------------
0         10.20.1.4             1030144       1          RX Tracking
0         10.20.1.4             1030144       1          RX Tracking
===============================================================================
PIM LDP Spmsi Interfaces : 2
===============================================================================
*A:Dut-C#
```

Sample Output RX Tracking for RSVP S-PMSI Tunnel Detail

```
*A:Dut-C# show router 1 pim s-pmsi detail

===============================================================================
PIM RSVP Spmsi tunnels
===============================================================================
P2MP ID            : 0                   Tunnel ID          : 0
Ext Tunnnel Addrs  : 10.20.1.4           Spmsi IfIndex      : 1030144
Number of VPN SGs  : 1                   Uptime             : 0d 00:02:48

VPN Group Address  : 225.100.0.0
VPN Source Address : 10.1.101.2
State              : RX Tracking         Mdt Threshold      : 0

===============================================================================
PIM RSVP Spmsi tunnels
===============================================================================
P2MP ID            : 0                   Tunnel ID          : 0
Ext Tunnnel Addrs  : 10.20.1.4           Spmsi IfIndex      : 1030144
Number of VPN SGs  : 1                   Uptime             : 0d 00:02:47

VPN Group Address  : ff0e:225:100::
VPN Source Address : 2001:10:1:101::2
State              : RX Tracking         Mdt Threshold      : 0
===============================================================================
PIM RSVP Spmsi Interfaces : 2
===============================================================================
*A:Dut-C# show router 21 pim s-pmsi detail


===============================================================================
PIM LDP Spmsi tunnels
===============================================================================
LSP ID             : 0
Root Addr          : 10.20.1.4           Spmsi IfIndex      : 1030144
Number of VPN SGs  : 1                   Uptime             : 0d 00:03:35
```

```
VPN Group Address  : 225.100.0.0
VPN Source Address : 10.1.101.2
State              : RX Tracking        Mdt Threshold      : 0

===============================================================================
PIM LDP Spmsi tunnels
===============================================================================
LSP ID             : 0
Root Addr          : 10.20.1.4          Spmsi IfIndex      : 1030144
Number of VPN SGs  : 1                  Uptime             : 0d 00:03:34

VPN Group Address  : ff0e:225:100::
VPN Source Address : 2001:10:1:101::2
State              : RX Tracking        Mdt Threshold      : 0
===============================================================================
PIM LDP Spmsi Interfaces : 2
===============================================================================
*A:Dut-C#
```

Sample Output TX Tracking for RSVP S-PMSI Tunnel Detail

```
*A:Dut-C# show router 1 pim s-pmsi detail
===============================================================================
PIM RSVP Spmsi tunnels
===============================================================================
P2MP ID            : 1                  Tunnel ID          : 61442
Ext Tunnnel Addrs  : 10.20.1.4          Spmsi IfIndex      : 74230
Number of VPN SGs  : 1                  Uptime             : 0d 00:05:11

VPN Group Address  : 225.100.0.0
VPN Source Address : 10.1.101.2
State              : TX Join Pending    Mdt Threshold      : 1
Join Timer         : N/A                Holddown Timer     : 0d 00:00:47
Receiver Count     : 4

===============================================================================
PIM RSVP Spmsi tunnels
===============================================================================
P2MP ID            : 1                  Tunnel ID          : 61443
Ext Tunnnel Addrs  : 10.20.1.4          Spmsi IfIndex      : 74231
Number of VPN SGs  : 1                  Uptime             : 0d 00:05:10

VPN Group Address  : ff0e:225:100::
VPN Source Address : 2001:10:1:101::2
State              : TX Join Pending    Mdt Threshold      : 1
Join Timer         : N/A                Holddown Timer     : 0d 00:00:50
Receiver Count     : 4
===============================================================================
PIM RSVP Spmsi Interfaces : 2
===============================================================================
*A:Dut-D# show router 21 pim s-pmsi detail

===============================================================================
PIM LDP Spmsi tunnels
===============================================================================
LSP ID             : 8194
```

```
Root Addr          : 10.20.1.4          Spmsi IfIndex      : 74228
Number of VPN SGs  : 1                  Uptime             : 0d 00:05:56

VPN Group Address  : 225.100.0.0
VPN Source Address : 10.1.101.2
State              : TX Join Pending    Mdt Threshold      : 1
Join Timer         : N/A                Holddown Timer     : 0d 00:00:02
Receiver Count     : 4

===============================================================================
PIM LDP Spmsi tunnels
===============================================================================
LSP ID             : 8195
Root Addr          : 10.20.1.4          Spmsi IfIndex      : 74229
Number of VPN SGs  : 1                  Uptime             : 0d 00:05:55

VPN Group Address  : ff0e:225:100::
VPN Source Address : 2001:10:1:101::2
State              : TX Join Pending    Mdt Threshold      : 1
Join Timer         : N/A                Holddown Timer     : 0d 00:00:05
Receiver Count     : 4
===============================================================================
PIM LDP Spmsi Interfaces : 2
===============================================================================
*A:Dut-D#
```

group

Syntax **group** *grp-ip-address* [**source** *ip-address* [**type** {**starstarrp** | **starg | sg**}] [**detail**] [*family*]

Context show>router>pim

Description This command displays PIM source group database information.

Parameters *grp-ip-address* — Specifies the IP multicast group address for which this entry contains information.

source *ip-address* **—** Specifies the source address for which this entry contains information.

type starstarrp — Specifies that only (*, *, rp) entries be displayed.

type starg — Specifies that only (*,G) entries be displayed.

type sg — specifies that only (S,G) entries be displayed.

detail — Displays detailed group information.

family — Displays either IPv4 or IPv6 information.

Output **PIM Group Output —** The following table provides PIM Group field descriptions.

Label	Description
Group Address	Displays the IP multicast group address for which this entry contains information.

Label	Description (Continued)
Source Address	Displays the source address of the multicast sender. It will be 0 if the type is configured as starg. It will be the address of the Rendezvous Point (RP) if the type is configured as starRP.
RP Address	Displays the RP address.
Type	Specifies the type of entry, (*,*, rp)/(*,G) or (S,G).
Spt Bit	Specifies whether to forward on (*,*, rp)/(*,G) or on (S,G) state. It is updated when the (S,G) data comes on the RPF interface towards the source.
Incoming Intf	Displays the interface on which the traffic comes in. It can be the RPF interface to the RP (if starg) or the source (if sg).
Num Oifs	Displays the number of interfaces in the inherited outgoing interface list. An inherited list inherits the state from other types.
Flags	Displays the different lists that this interface belongs to.
Keepalive Timer Exp	The keepalive timer is applicable only for (S,G) entries. The (S,G) keepalive timer is updated by data being forwarded using this (S,G) Forwarding state. It is used to keep (S,G) state alive in the absence of explicit (S,G) joins.
MRIB Next Hop	Displays the next hop address towards the RP.
MRIB Src Flags	Displays the MRIB information about the source. If the entry is of type starg or starstarrp, it will contain information about the RP for the group.
Up Time	Displays the time since this source group entry was created.
Resolved By	Displays the route table used for RPF check.
Up JP State	Displays the upstream join prune state for this entry on the interface. PIM join prune messages are sent by the downstream routers towards the RPF neighbor.
Up JP Expiry	Displays the minimum amount of time remaining before this entry will be aged out.
Up JP Rpt	Displays the join prune Rpt state for this entry on the interface. PIM join/prune messages are sent by the downstream routers towards the RPF neighbor. (S,G, rpt) state is a result of receiving (S,G, rpt) JP message from the downstream router on the RP tree.

Label	Description (Continued)
Up JP Rpt Override	Displays the value used to delay triggered Join (S,G, rpt) messages to prevent implosions of triggered messages. If this has a non-zero value, it means that the router was in 'notPruned' state and it saw a prune (S,G, rpt) message being sent to RPF (S,G, rpt). If the router sees a join (S,G, rpt) override message being sent by some other router on the LAN while the timer is still non-zero, it simply cancels the override timer. If it does not see a join (S,G, rpt) message, then on expiry of the override timer, it sends it's own join (S,G, rpt) message to RPF (S,G, rpt). A similar scenario exists when RPF (S,G, rpt) changes to become equal to RPF (*,G).
Register State	Specifies the register state. The register state is kept at the source DR. When the host starts sending multicast packets and if there are no entries programmed for that group, the source DR sends a register packet to the RP (g). Register state transition happen based on the register stop timer and the response received from the RP.
Register Stop Exp	Displays the time remaining before the register state might transition to a different state.
Register from Anycast RP	Displays if the register packet for that group has been received from one of the RP from the anycast-RP set.
RPF Neighbor	Displays the address of the RPF neighbor.
Outgoing Intf List	Displays a list of interfaces on which data is forwarded.
Curr Fwding Rate	Displays the current forwarding rate of the multicast data for this group and source. This forwarding rate is calculated before ingress QoS policing or shaping is applied.
Forwarded Packets	Displays the number of multicast packets that were forwarded to the interfaces in the outgoing interface list. This packet count is before ingress QoS policing or shaping is applied.
Discarded Packets	Displays the number of multicast packets that matched this source group entry but were discarded. For (S,G) entries, if the traffic is getting forwarded on the SPT, the packets arriving from the RPT will be discarded.
Forwarded Octets	Displays the number of octets forwarded.
RPF Mismatches	Displays the number of multicast packets that matched this source group entry but they did not arrive on the interface.
Spt threshold	Displays the value of the SPT threshold configured for that group. 0 Kbps means that the switch to the SP tree will happen immediately.

Sample Output

```
A:Dut-A# show router pim group
===============================================================================
PIM Group ipv4
===============================================================================
Group Address                Type               Spt Bit Inc Intf         no.Oifs
 Source Address                RP                          Inc Intf(S)
-------------------------------------------------------------------------------
224.1.1.1                    (S,G)                      ip-10.10.2.1      1
   3.1.1.2                      10.20.1.4                  ip-10.10.1*

*A:Dut-C# show router 100 pim group ipv6

===============================================================================
Legend:  A = Active   S = Standby
===============================================================================
PIM Groups ipv6
===============================================================================
Group Address                Type                Spt Bit  Inc Intf       No.Oifs
   Source Address               RP                   State    Inc Intf(S)
-------------------------------------------------------------------------------
ff04::224:100:0:0            (*,G)                           vprn_itf_C_11* 2
   *                            3ffe::110:100:1*
ff04::224:100:0:0            (S,G)               spt         mpls-if-74457* 3
   3ffe::100:114:1:2            3ffe::110:100:1*
ff04::224:100:0:1            (*,G)                           vprn_itf_C_11* 2
   *                            3ffe::110:100:1*
ff04::224:100:0:1            (S,G)               spt         mpls-if-74457* 3
   3ffe::100:114:1:2            3ffe::110:100:1*
ff04::224:100:0:2            (*,G)                           vprn_itf_C_11* 2
   *                            3ffe::110:100:1*
ff04::224:100:0:2            (S,G)               spt         mpls-if-74457* 3
   3ffe::100:114:1:2            3ffe::110:100:1*
ff04::224:100:0:3            (*,G)                           vprn_itf_C_11* 2
   *                            3ffe::110:100:1*
ff04::224:100:0:3            (S,G)               spt         mpls-if-74457* 3
   3ffe::100:114:1:2            3ffe::110:100:1*
ff04::224:100:0:4            (*,G)                           vprn_itf_C_11* 2
   *                            3ffe::110:100:1*
ff04::224:100:0:4            (S,G)               spt         mpls-if-74457* 3
   3ffe::100:114:1:2            3ffe::110:100:1*
-------------------------------------------------------------------------------
Groups : 10
===============================================================================
* indicates that the corresponding row element may have been truncated.

A:NYC>show>router>pim# group 239.255.255.250
===============================================================================
PIM Groups
===============================================================================
Group Address   Source Address  RP Address      Type     Spt Incoming      Num
                                                         Bit Intf          Oifs
-------------------------------------------------------------------------------
239.255.255.250 *               2.22.187.240    <*,G>        nyc-sjc       1
-------------------------------------------------------------------------------
Groups : 1
===============================================================================
A:NYC>show>router>pim#
```

```
A:NYC>show>router>pim# group 239.255.255.250 detail
===============================================================================
PIM Source Group
===============================================================================
Group Address      : 239.255.255.250 Source Address     : 16.1.1.2
RP Address         : 100.100.100.1      Type              : (S,G)
Flags              : spt, rpt-prn-des   Keepalive Timer Exp: 0d 00:03:07
MRIB Next Hop      : 16.1.1.2           MRIB Src Flags     : direct
Up Time            : 0d 00:00:50        Resolved By        : rtable-u

Up JP State        : Joined             Up JP Expiry       : 0d 00:00:00
Up JP Rpt          : Pruned             Up JP Rpt Override : 0d 00:00:00

Register State     : Pruned             Register Stop Exp  : 0d 00:00:47
Reg From Anycast RP: No

RPF Neighbor       : 16.1.1.2
Incoming Intf      : SOURCE-3
Outgoing Intf List : To-Dut-A

Curr Fwding Rate   : 482.9 kbps
Forwarded Packets  : 1262               Discarded Packets  : 0
Forwarded Octets   : 1269572            RPF Mismatches     : 0
Spt threshold      : 0 kbps
===============================================================================
A:NYC>show>router>pim#


B:Dut-C# show router pim group 225.0.0.1 type sg detail
===============================================================================
PIM Source Group ipv4
===============================================================================
Group Address      : 225.0.0.1
Source Address     : 11.11.0.1
RP Address         : 10.20.1.3
Flags              : rpt-prn-des        Type              : (S,G)
MRIB Next Hop      : 11.11.0.1
MRIB Src Flags     : direct             Keepalive Timer    : Not Running
Up Time            : 0d 00:04:17        Resolved By        : rtable-u

Up JP State        : Joined             Up JP Expiry       : 0d 00:00:00
Up JP Rpt          : Pruned             Up JP Rpt Override : 0d 00:00:00

Register State     : No Info
Reg From Anycast RP: No

Rpf Neighbor       : 11.11.0.1
Incoming Intf      : svc_itf
Outgoing Host List : 112.112.1.1

Curr Fwding Rate   : 0.0 kbps
Forwarded Packets  : 0                  Discarded Packets  : 0
Forwarded Octets   : 0                  RPF Mismatches     : 0
Spt threshold      : 0 kbps             ECMP opt threshold : 7
Admin bandwidth    : 1 kbps             Preference         : 0

===============================================================================
```

```
PIM Source Group ipv4
===============================================================================
Group Address      : 225.0.0.1
Source Address     : 11.11.0.2
RP Address         : 10.20.1.3
Flags              :                    Type               : (S,G)
MRIB Next Hop      : 11.11.0.2
MRIB Src Flags     : direct             Keepalive Timer    : Not Running
Up Time            : 0d 00:04:18        Resolved By        : rtable-u

Up JP State        : Joined             Up JP Expiry       : 0d 00:00:00
Up JP Rpt          : Not Pruned         Up JP Rpt Override : 0d 00:00:00

Register State     : No Info
Reg From Anycast RP: No

Rpf Neighbor       : 11.11.0.2
Incoming Intf      : svc_itf
Outgoing Host List : 112.112.1.1, 112.112.1.2

Curr Fwding Rate   : 0.0 kbps
Forwarded Packets  : 0                  Discarded Packets  : 0
Forwarded Octets   : 0                  RPF Mismatches     : 0
Spt threshold      : 0 kbps             ECMP opt threshold : 7
Admin bandwidth    : 1 kbps             Preference         : 0
-------------------------------------------------------------------------------
Groups : 2
===============================================================================
*B:Dut-C#

A:Dut-A# show router pim group detail
===============================================================================
PIM Source Group ipv4
===============================================================================
Group Address      : 224.1.1.1
Source Address     : 3.1.1.21
RP Address         : 10.20.1.4
Advt Ruoter        : 10.20.1.3
Flags              :                    Type               : (S,G)
MRIB Next Hop      : 10.10.2.3
MRIB Src Flags     : remote             Standby Src Flags  : remote
keepalive Timer    : Not Running
Up Time            : 0d 00:01:22        Resolved By        : rtable-u

Up JP State        : Joined             Up JP Expiry       : 0d 00:00:00
Up JP Rpt          : Pruned             Up JP Rpt Override : 0d 00:00:00
Up Stdby JP State  : Joined             Up Stdby JP Expiry : 0d 00:00:12

Register State     : No Info
Reg From Anycast RP: No

Rpf Neighbor       : 10.10.2.3          Stdby Rpf Neighbor : 10.10.1.2
Incoming Intf      : ip-10.10.2.1       Stdby Intf         : ip-10.10.1.1
Outgoing Host List : ix

Curr Fwding Rate   : 0.0 kbps
Forwarded Packets  : 0                  Discarded Packets  : 0
Forwarded Octets   : 0                  RPF Mismatches     : 0
Spt threshold      : 0 kbps             ECMP opt threshold : 7
```

```
Admin bandwidth    : 1 kbps

===============================================================================
PIM Source Group ipv4
```

interface

Syntax **interface** [*ip-int-name* | *mt-int-name* |*ip-address*] [**group** *grp-ip-address* | **source** *ip-address* [**type** {**starstarrp** | **starg** | **sg**}] [**detail**] [**family**]

Context show>router>pim

Description This command displays PIM interface information and the (S,G)/(*,G)/(*, *, rp) state of the interface.

Parameters *ip-int-name* — Only displays the interface information associated with the specified IP interface name.

ip-address — Only displays the interface information associated with the specified IP address.

group *grp-ip-address* — Specifies the IP multicast group address for which this entry contains information.

source *ip-address* — Specifies the source address for which this entry contains information.

If the type is starg, the value of this object will be zero.

If the type is starstarrp, the value of this object will be address of the RP.

type — Specifies the type of this entry.

Values **starstarrp**, **starg**, **sg**

detail — Displays detailed interface information.

family — Displays IPv4 or IPv6 information for the interface.

Output **PIM Interface Output —** The following table provides PIM interface field descriptions.

Label	Description
Admin State	Displays the administrative state for PIM protocol on this interface.
Oper State	Displays the current operational state of PIM protocol on this interface.
DR	Displays the designated router on this PIM interface.
DR Priority	Displays the priority value sent in PIM Hello messages and that is used by routers to elect the designated router (DR).
Hello Intvl	Indicates the frequency at which PIM Hello messages are transmitted on this interface.

Sample Output

```
ALA-1# show router pim interface
===============================================================================
PIM Interfaces
===============================================================================
Interface                       Admin  Oper   DR              DR        Hello
                                State  State                  Priority  Intvl
-------------------------------------------------------------------------------
system                          Up     Up     N/A             1         30
ip-10.1.7.1                     Up     Up     10.1.7.7        5         30
ip-10.1.2.1                     Up     Up     10.1.2.2        5         30
ip-100.111.1.1                  Up     Up     100.111.1.1     5         30
-------------------------------------------------------------------------------
Interfaces : 4
===============================================================================
ALA-1#


ALA-1# show router pim interface ip-10.1.2.1 detail
===============================================================================
PIM Interface ip-10.1.2.1
===============================================================================
Interface                       Admin  Oper   DR              DR        Hello
                                State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-10.1.2.1                     Up     Up     10.1.2.2        5         30
-------------------------------------------------------------------------------
PIM Group Source
-------------------------------------------------------------------------------
Group Address      : 228.101.0.5        Src Address        : 100.111.1.2
Interface          : ip-10.1.2.1        Type               : <S,G>
RP Address         : 200.200.200.4

Join Prune State   : Join               Expires            : 0d 00:03:00
Prune Pend Expires : N/A

Assert State       : No Info
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
ALA-1#


ALA-1# show router pim interface group
===============================================================================
PIM Interface ip-10.1.7.1
===============================================================================
Interface                       Admin  Oper   DR              DR        Hello
                                State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-10.1.7.1                     Up     Up     10.1.7.7        5         30
-------------------------------------------------------------------------------
Group Address    Source Address   RP Address       Type     JP        Assert
-------------------------------------------------------------------------------
228.101.0.0      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.1      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.2      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.3      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
```

```
228.101.0.4      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.6      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.7      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.8      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
228.101.0.9      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
===============================================================================
PIM Interface ip-10.1.2.1
===============================================================================
Interface                      Admin  Oper   DR              DR        Hello
                               State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-10.1.2.1                    Up     Up     10.1.2.2        5         30
-------------------------------------------------------------------------------
Group Address    Source Address   RP Address       Type     JP        Assert
-------------------------------------------------------------------------------
228.101.0.5      100.111.1.2      200.200.200.4    <S,G>    Join      No Info
===============================================================================
PIM Interface ip-100.111.1.1
===============================================================================
Interface                      Admin  Oper   DR              DR        Hello
                               State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-100.111.1.1                 Up     Up     100.111.1.1     5         30
-------------------------------------------------------------------------------
Group Address    Source Address   RP Address       Type     JP        Assert
-------------------------------------------------------------------------------
228.102.0.0      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.1      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.2      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.3      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.4      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.5      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.6      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.7      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.8      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.9      *                200.200.200.4    <*,G>    Join      No Info
-------------------------------------------------------------------------------
Interfaces : 3
===============================================================================
ALA-1#


ALA-1# show router pim interface group 228.102.0.0 detail
===============================================================================
PIM Interface ip-100.111.1.1
===============================================================================
Interface                      Admin  Oper   DR              DR        Hello
                               State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-100.111.1.1                 Up     Up     100.111.1.1     5         30
-------------------------------------------------------------------------------
PIM Group Source
-------------------------------------------------------------------------------
Group Address      : 228.102.0.0        Src Address        : *
Interface          : ip-100.111.1.1     Type               : <*,G>
RP Address         : 200.200.200.4

Join Prune State   : Join               Expires            : 0d 00:02:05
Prune Pend Expires : N/A
```

```
Assert State       : No Info
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
ALA-1#


ALA-1# show router pim interface type starg
===============================================================================
PIM Interface ip-100.111.1.1
===============================================================================
Interface                       Admin  Oper   DR              DR        Hello
                                State  State                  Priority  Intvl
-------------------------------------------------------------------------------
ip-100.111.1.1                  Up     Up     100.111.1.1     5         30
-------------------------------------------------------------------------------
Group Address    Source Address   RP Address       Type     JP        Assert
-------------------------------------------------------------------------------
228.102.0.0      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.1      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.2      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.3      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.4      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.5      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.6      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.7      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.8      *                200.200.200.4    <*,G>    Join      No Info
228.102.0.9      *                200.200.200.4    <*,G>    Join      No Info
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
ALA-1#


A:SetupCLI# show router pim interface detail
===============================================================================
PIM Interface int1
===============================================================================
Interface          : int1
Admin Status       : Up                 Oper Status        : Up
DR                 : 10.1.1.1           Oper DR Priority   : 1
BSM RA Check       : Disabled           Cfg DR Priority    : 1
Hello Interval     : 30                 Time for next hello: 0d 00:00:23
Multicast Senders  : auto               Hello Multiplier   : 35
J/P Tracking Admin : Disabled           J/P Tracking Oper  : Disabled
Auto-created       : No                 Improved Assert    : Enabled
Sticky-DR          : Disabled           Sticky-DR Priority : N/A
Max Groups Allowed : 0                  Max Groups Till Now: 0
Num Groups         : 0                  Bfd Enabled        : No
===============================================================================
PIM Interface sender
===============================================================================
Interface          : sender
Admin Status       : Up                 Oper Status        : Up
DR                 : 11.1.1.1           Oper DR Priority   : 1
===============================================================================
A:SetupCLI#
```

neighbor

Syntax **neighbor** [*ip-address* | *ip-int-name* [**address** *ip-address*]] [**detail**] [*family*]

Context show>router>pim

Description This command displays PIM neighbor information.

This can be important if an interface has more than one adjacency. For example, a LAN-interface configuration with three routers connected and all are running PIM on their LAN interfaces. These routers then have two adjacencies on their LAN interface, each with different neighbors. If the **address** *address* parameter is not defined in this example, then the **show** command output would display two adjacencies.

Parameters **neighbor** *ip-int-name* **—** Only displays the interface information associated with the specified IP interface name.

neighbor *ip-address* — Only displays the interface information associated with the specified IP address.

address *ip-address* **—** The ip-address of the neighbor, on the other side of the interface.

detail — Displays detailed neighbor information.

family — Displays either IPv4 or IPv6 information for the specified neighbor.

Output **PIM Neighbor Output —** The following table provides PIM neighbor field descriptions.

Label	Description
Interface	Displays the neighbor's interface name. (W) indicates wildcard tunnels.
Nbr DR Priority	Displays the value of the neighbor's DR priority which is received in the hello message.
Nbr Address	Displays the neighbor's address.
Up Time	Displays the time since this PIM neighbor (last) became a neighbor of the local router.
Expiry Time	Displays the minimum time remaining before this PIM neighbor will be aged out. 0 – Means that this neighbor will never be aged out. This happens when the PIM neighbor sends a Hello message with holdtime set to `0xffff'.
Hold Time	Displays the value of the hold time present in the hello message.
DR Priority	Displays the value of the neighbor's DR priority which is received in the hello message.
Tracking Support	Displays whether the T bit in the LAN prune delay option was present in the hello message. This indicates the neighbor's capability to disable join message suppression.
LAN Delay	Displays the value of the LAN delay field present in the hello message received from the neighbor.

Label	Description (Continued)
Gen Id	Displays a randomly generated 32-bit value that is regenerated each time PIM forwarding is started or restarted on the interface, including when the router itself restarts. When a hello message with a new GenID is received from a neighbor, any old hello information about that neighbor is discarded and superseded by the information from the new hello message.
Override Intvl (ms)	Displays the value of the override interval present in the Hello message.

Sample Output

```
ALA-1# show router pim neighbor
===============================================================================
PIM Neighbors
===============================================================================
Interface          Nbr DR     Nbr Address     Up Time       Expiry Time   Hold
                   Priority                                               Time
-------------------------------------------------------------------------------
ip-10.1.7.1        5          10.1.7.7        0d 00:10:39   0d 00:01:36   105
ip-10.1.2.1        5          10.1.2.2        0d 00:10:39   0d 00:01:35   105
ip-100.111.1.1     3          100.111.1.2     0d 00:09:31   0d 00:01:15   105
-------------------------------------------------------------------------------
Neighbors : 3
===============================================================================
ALA-1#

*A:Dut-C# show router 100 pim neighbor ipv6

===============================================================================
PIM Neighbor ipv6
===============================================================================
Interface               Nbr DR Prty     Up Time       Expiry Time     Hold Time
   Nbr Address
-------------------------------------------------------------------------------
vprn_itf_C_1100         1               0d 00:02:54   0d 00:01:43     105
   fe80::4403:1ff:fe01:2
mpls-if-74456(W)        1               0d 00:02:10   never           65535
   ::a14:104
mpls-if-74457(W)        1               0d 00:02:10   never           65535
   ::a14:105
mpls-virt-if-1030145    1               0d 00:02:44   never           65535
   ::a14:102
-------------------------------------------------------------------------------
Neighbors : 4
===============================================================================


ALA-1# show  router pim neighbor detail
===============================================================================
PIM Neighbor
```

```
===============================================================================
Interface          : ip-10.1.7.1
Neighbor Addr      : 10.1.7.7           DR Priority        : 5
Tracking Support   : No                 LAN Delay(ms)      : 500
Gen Id             : 26470              Override Intvl(ms) : 2500
Up Time            : 0d 00:10:41        Expiry Time        : 0d 00:01:34
Hold Time(sec)     : 105

===============================================================================
PIM Neighbor
===============================================================================
Interface          : ip-10.1.2.1
Neighbor Addr      : 10.1.2.2           DR Priority        : 5
Tracking Support   : No                 LAN Delay(ms)      : 500
Gen Id             : 37928              Override Intvl(ms) : 2500
Up Time            : 0d 00:10:42        Expiry Time        : 0d 00:01:33
Hold Time(sec)     : 105

===============================================================================
PIM Neighbor
===============================================================================
Interface          : ip-100.111.1.1
Neighbor Addr      : 100.111.1.2        DR Priority        : 3
Tracking Support   : No                 LAN Delay(ms)      : 500
Gen Id             : 742098371          Override Intvl(ms) : 2500
Up Time            : 0d 00:09:33        Expiry Time        : 0d 00:01:43
Hold Time(sec)     : 105
-------------------------------------------------------------------------------
Neighbors : 3
===============================================================================
ALA-1#
```

rp

Syntax **rp** *ip-address*

Context show>router>pim

Description This command displays the rendezvous point (RP) set information built by the router.

Parameters *ip-address* — Specifies the IP address of the RP.

Output **PIM Neighbor Output —** The following table provides PIM neighbor field descriptions.

Label	Description
Group Address	Displays the multicast group address of the entry.
RP Address	Displays the address of the Rendezvous Point (RP).
Type	Specifies whether the entry was learned through the Bootstrap mechanism or if it was statically configured.
Priority	Displays the priority for the specified group address. The higher the value, the higher the priority.

Label	Description (Continued)
Holdtime	Displays the value of the hold time present in the BSM message.

Sample Output

```
A:ALA-1# show router pim rp
===============================================================
PIM RP Set
===============================================================
Group Address      RP Address      Type        Priority  Holdtime
---------------------------------------------------------------
224.0.0.0/4        200.200.200.4   Dynamic     192       150
                   10.1.7.1        Static      1         N/A
---------------------------------------------------------------
Group Prefixes : 1
===============================================================
A:ALA-1#


A:ALA-1# show router pim rp 10.1.7.1
===============================================================
PIM RP Set
===============================================================
Group Address      RP Address      Type        Priority  Holdtime
---------------------------------------------------------------
224.0.0.0/4        10.1.7.1        Static      1         N/A
---------------------------------------------------------------
Group Prefixes : 1
===============================================================
A:ALA-1#
```

rp-hash

Syntax **rp-hash** *grp-ip-address*

Context show>router>pim

Description This command hashes the RP for the specified group from the RP set.

Parameters *grp-ip-address* — Displays specific multicast group addresses.

Output **PIM RP-Hash Output —** The following table provides RP-Hash output field descriptions.

Label	Description
Group Address	Displays the multicast group address of the entry.
RP Address	Displays the address of the Rendezvous Point (RP).
Type	Specifies whether the entry was learned through the Bootstrap mechanism or if it was statically configured.

Sample Output

```
A:ALA-1# show router pim rp-hash 228.101.0.0
===============================================
PIM Group-To-RP mapping
===============================================
Group Address      RP Address      Type
-----------------------------------------------
228.101.0.0        200.200.200.4   Bootstrap
===============================================
A:ALA-1#


A:ALA-1# show router pim rp-hash 228.101.0.6
===============================================
PIM Group-To-RP mapping
===============================================
Group Address      RP Address      Type
-----------------------------------------------
228.101.0.6        200.200.200.4   Bootstrap
===============================================
A:ALA-1#
```

statistics

Syntax **statistics** [*ip-int-name* | *mt-int-name* | *ip-address*] [*family*]

Context show>router>pim

Description This command displays statistics for a particular PIM instance.

Parameters *ip-int-name* — Only displays the interface information associated with the specified IP interface name.

ip-address — Only displays the interface information associated with the specified IP address.

family — Displays either IPv4 or IPv6 information.

Output **PIM Statistics Output —** The following table provides PIM statistics output field descriptions.

Label	Description
PIM Statistics	The section listing the PIM statistics for a particular interface.
Message Type	Displays the type of message. Hello — Displays the number of PIM hello messages received or transmitted on this interface. Join Prune — Displays the number of PIM join prune messages received or transmitted on this interface. Asserts — Displays the number of PIM assert messages received or transmitted on this interface.

Label	Description (Continued)
	Register – Displays the number of register messages received or transmitted on this interface. Null Register – Displays the number of PIM null register messages received or transmitted on this interface. Register Stop – Displays the number of PIM register stop messages received or transmitted on this interface. BSM – Displays the number of PIM Bootstrap messages (BSM) received or transmitted on this interface. Candidate RP Adv – Displays the number of candidate RP advertisements. Total Packets – Displays the total number of packets transmitted and received on this interface.
Received	Displays the number of messages received on this interface.
Transmitted	Displays the number of multicast data packets transmitted on this interface.
Rx Errors	Displays the total number of receive errors.
General Interface Statistics	The section listing the general PIM interface statistics.
Register TTL Drop	Displays the number of multicast data packets which could not be encapsulated in Register messages because the time to live (TTL) was zero.
Tx Register MTU Drop	Displays the number of Bootstrap messages received on this interface but were dropped.
Rx Invalid Register	Displays the number of invalid PIM register messages received on this interface.
Rx Neighbor Unknown	Displays the number of PIM messages (other than hello messages) which were received on this interface and were rejected because the adjacency with the neighbor router was not already established.
Rx Bad Checksum Discard	Displays the number of PIM messages received on this interface which were discarded because of bad checksum.
Rx Bad Encoding	Displays the number of PIM messages with bad encodings received on this interface.
Rx Bad Version Discard	Displays the number of PIM messages with bad versions received on this interface.
Rx CRP No Router Alert	Displays the number of candidate-rp advertisements (C-RP-Adv) received on this interface which had no router alert option set.

Label	Description (Continued)
Rx Invalid Join Prune	Displays the number of invalid PIM join prune messages received on this interface.
Rx Unknown PDU Type	Displays the number of packets received with an unsupported PIM type.
Join Policy Drops	Displays the number of times the join policy match resulted in dropping PIM join-prune message or one of the source group contained in the message.
Register Policy Drops	Displays the number of times the register policy match resulted in dropping PIM register message.
Bootstrap Import Policy Drops	Displays the number of Bootstrap messages received on this interface but were dropped because of Bootstrap import policy.
Bootstrap Export Policy Drops	Displays the number of Bootstrap messages that were not transmitted on this interface because of Bootstrap export policy.
Source Group Statistics	The section listing the source group statistics.
(S,G)	Displays the number of entries in which the type is (S,G).
(*,G)	Displays the number of entries in which the type is (*,G).
(*,*,RP)	Displays the number of entries in which the type is (*, *, rp).

Sample output

```
A:ALA-1# show router pim statistics
===============================================================
PIM Statistics
===============================================================
Message Type        Received       Transmitted    Rx Errors
---------------------------------------------------------------
Hello               198            200            0
Join Prune          96             75             0
Asserts             0              0              0
Register            0              30             0
Null Register       0              160            0
Register Stop       180            0              0
BSM                 34             76             0
Candidate RP Adv    0              0              0
Total Packets       546            541
---------------------------------------------------------------
General Interface Statistics
---------------------------------------------------------------
Register TTL Drop                : 0
Tx Register MTU Drop             : 0
Rx Invalid Register              : 0
Rx Neighbor Unknown              : 0
Rx Bad Checksum Discard          : 0
Rx Bad Encoding                  : 0
```

```
Rx Bad Version Discard            : 0
Rx CRP No Router Alert            : 0
Rx Invalid Join Prune             : 120
Rx Unknown PDU Type               : 0
Join Policy Drops                 : 0
Register Policy Drops             : 0
Bootstrap Import Policy Drops     : 0
Bootstrap Export Policy Drops     : 0
-------------------------------------------------------------------
Source Group Statistics
-------------------------------------------------------------------
(S,G)                             : 10
(*,G)                             : 10
(*,*,RP)                          : 0
===================================================================
A:ALA-1#

A:ALA-1# show router pim statistics 10.1.7.1
===================================================================
PIM Interface 10.1.7.1 Statistics
===================================================================
Message Type        Received       Transmitted    Rx Errors
-------------------------------------------------------------------
Hello               62             66             0
Join Prune          36             21             0
Asserts             0              0              0
Register            0              0              0
Null Register       0              0              0
Register Stop       0              0              0
BSM                 33             3              0
Total Packets       134            90
-------------------------------------------------------------------
General Interface Statistics
-------------------------------------------------------------------
Register TTL Drop                 : 0
Tx Register MTU Drop              : 0
Rx Invalid Register               : 0
Rx Neighbor Unknown               : 0
Rx Bad Checksum Discard           : 0
Rx Bad Encoding                   : 0
Rx Bad Version Discard            : 0
Rx CRP No Router Alert            : 0
Rx Invalid Join Prune             : 0
Rx Unknown PDU Type               : 0
Join Policy Drops                 : 0
Register Policy Drops             : 0
Bootstrap Import Policy Drops     : 0
Bootstrap Export Policy Drops     : 0
-------------------------------------------------------------------
Interface Source Group Statistics
-------------------------------------------------------------------
(S,G)                             : 9
(*,G)                             : 0
(*,*,RP)                          : 0
===================================================================
A:ALA-1#

A:ALA-1# show router pim statistics ip-10.1.7.1
===================================================================
```

```
PIM Interface ip-10.1.7.1 Statistics
===============================================================
Message Type        Received       Transmitted    Rx Errors
---------------------------------------------------------------
Hello               63             67             0
Join Prune          36             21             0
Asserts             0              0              0
Register            0              0              0
Null Register       0              0              0
Register Stop       0              0              0
BSM                 33             3              0
Total Packets       135            91
---------------------------------------------------------------
General Interface Statistics
---------------------------------------------------------------
Register TTL Drop                : 0
Tx Register MTU Drop             : 0
Rx Invalid Register              : 0
Rx Neighbor Unknown              : 0
Rx Bad Checksum Discard          : 0
Rx Bad Encoding                  : 0
Rx Bad Version Discard           : 0
Rx CRP No Router Alert           : 0
Rx Invalid Join Prune            : 0
Rx Unknown PDU Type              : 0
Join Policy Drops                : 0
Register Policy Drops            : 0
Bootstrap Import Policy Drops    : 0
Bootstrap Export Policy Drops    : 0
---------------------------------------------------------------
Interface Source Group Statistics
---------------------------------------------------------------
(S,G)                            : 9
(*,G)                            : 0
(*,*,RP)                         : 0
===============================================================
A:ALA-1#
```

status

Syntax **status** [**detail**] [*family*]

Context show>router>pim

Description This command displays PIM status. The Oper Status reflects the combined operational status of IPv4/IPv6 PIM protocol status. If both are down, then Oper Status will be reflected as down. If IPv4 or IPv6 reflects up, the Oper Status will reflect up.

If PIM is not enabled, the following message appears:

```
A:NYC# show router pim status
MINOR: CLI PIM is not configured.
A:NYC#
```

Parameters **detail —** Displays detailed statis information.

family — Displays either IPv4 or IPv6 information.

Output **PIM Status Output —** The following table provides PIM status output field descriptions.

Label	Description
Admin State	Displays the administrative status of PIM.
Oper State	Displays the current operating state of this PIM protocol instance.
BSR State	Displays the state of the router with respect to the Bootstrap mechanism.
Address	Displays the address of the elected Bootstrap router.
Expiry Time	Displays the time remaining before the router sends the next Bootstrap message.
Priority	Displays the priority of the elected Bootstrap router. The higher the value, the higher the priority.
Hash Mask Length	Displays the hash mask length of the Bootstrap router.
Up Time	Displays the time since the current E-BSR became the Bootstrap router.
RPF Intf towards	Displays the RPF interface towards the elected BSR. The value is zero if there is no elected BSR in the network.
Address	Displays the address of the candidate BSR router.
Expiry Time	Displays the time remaining before the router sends the next Bootstrap message.
Priority	Displays the priority of the Bootstrap router. The higher the value, the higher the priority.
Hash Mask Length	Displays the hash mask length of the candidate Bootstrap router.
Up Time	Displays the time since becoming the Bootstrap router.
Admin State	Displays the administrative status of CRP.
Oper State	Displays the current operating state of the C-RP mechanism.
Address	Displays the local RP address.
Priority	Displays the CRP's priority for becoming a rendezvous point (RP). A 0 value is the highest priority.
Holdtime	Displays the hold time of the candidate RP. It is used by the Bootstrap router to timeout the RP entries if it does not listen to another CRP advertisement within the holdtime period.
Policy	Displays the PIM policies for a particular PIM instance.
Default Group	Displays the default core group address.
RPF Table	Displays the route table used for RPF check.

Label	Description (Continued)
MC-ECMP-Hashing	Displays if hash-based multicast balancing of traffic over ECMP links is enabled or disabled.

Sample Output

```
A:dut-d# show router pim status
===============================================================================
PIM Status
===============================================================================
Admin State                       : Up
Oper State                        : Up

BSR State                         : Accept Any

Elected BSR
    Address                       : None
    Expiry Time                   : N/A
    Priority                      : N/A
    Hash Mask Length              : N/A
    Up Time                       : N/A
    RPF Intf towards E-BSR        : N/A

Candidate BSR
    Admin State                   : Down
    Oper State                    : Down
    Address                       : None
    Priority                      : 0
    Hash Mask Length              : 30

Candidate RP
    Admin State                   : Down
    Oper State                    : Down
    Address                       : None
    Priority                      : 192
    Holdtime                      : 150

MC-ECMP-Hashing                   : Enabled

Policy                            : None

Default Group                : 239.1.1.1

RPF Table                         : rtable-m
===============================================================================
A:dut-d#

*A:Dut-A# show router pim status detail

===============================================================================
PIM Status ipv4
===============================================================================
Admin State                       : Up
Oper State                        : Up

IPv4 Admin State                  : Up
```

```
IPv4 Oper State                    : Up

BSR State                          : Accept Any

Elected BSR
    Address                        : None
    Expiry Time                    : N/A
    Priority                       : N/A
    Hash Mask Length               : 30
    Up Time                        : N/A
    RPF Intf towards E-BSR         : N/A

Candidate BSR
    Admin State                    : Down
    Oper State                     : Down
    Address                        : None
    Priority                       : 0
    Hash Mask Length               : 30

Candidate RP
    Admin State                    : Down
    Oper State                     : Down
    Address                        : 0.0.0.0
    Priority                       : 192
    Holdtime                       : 150

Auto-RP                            : Disabled

Multicast-Fast-Failover            : Disabled

SSM-Default-Range                  : Enabled
SSM-Assert-Comp-Mode               : Disabled
SSM-Group-Range
    None

MC-ECMP-Hashing                    : Disabled

MC-ECMP-Hashing-Rebalance          : Disabled

Enable-MDT-SPT                     : Disabled

Policy                             : None

RPF Table                          : rtable-u

Non-DR-Attract-Traffic             : Disabled

Rpf-Vector                         : None

ESM                                : Disabled

MDT Configurations
    MDT Default Group              : 0.0.0.0
    MDT Data Range                 : /0
    MDT Data Delay Interval        : 3

    MDT Data Threshold Range       : 224.0.0.0/4
    MDT Data Threshold             : 1
    MDT SPMSI Add Rx Threshold     : 65534
```

```
    MDT SPMSI Delete Rx Threshold : 65535


    MDT Data Threshold Range      : ff00::/8
    MDT Data Threshold            : 1
    MDT SPMSI Add Rx Threshold    : 65534
    MDT SPMSI Delete Rx Threshold : 65535

===============================================================================
*
```

tunnel-interface

Syntax **tunnel-interface** [<*ip-int-name* | *mt-int-name* | i*nt-ip-address*>] [**group** [<*grp-ip-address*>] **source** <*ip-address*>] [**type** {**starstarrp** | **starg** | **sg**}] [**detail**] [*family*]

Context show>router>pim

Description This command displays tunnel interface information.

Parameters *ip-int-name* — Specifies the IP interface name.

Values maximum 32 characters

mt-int-name — Specifies the VPRN ID

Values <*vprn-id*>-mt-<*grp-ip-address*>

int-ip-address — Specifies the interface IP address

Values ipv4 or ipv6 IP address

grp-ip-address — Specifies the group IP address

Values Specifies the multicast group ipv4 or ipv6 address or zero

ip-address — Specifies the source or RP IP address

Values Specifies the source or RP ipv4 or ipv6 address

family — Specifies the group IP address

Values ipv4 | ipv6

Output

```
*A:Dut-C# show router 100 pim tunnel-interface ipv6
===============================================================================
PIM Interfaces ipv6
===============================================================================
Interface Originator Address Adm Opr Transport Type
-------------------------------------------------------------------------------
mpls-if-74455(W) 10.20.1.3 Up Down Tx-IPMSI
mpls-if-74456(W) 10.20.1.4 Up Up Rx-IPMSI
mpls-if-74457(W) 10.20.1.5 Up Up Rx-IPMSI
mpls-virt-if-1030145 10.20.1.2 Up Up Rx-IPMSI
-------------------------------------------------------------------------------
Interfaces : 4
===============================================================================
```

mld

Syntax **mld**

Context show>router

Description This command displays MLD related information.

group

Syntax **group** [*grp-ipv6-address*]

Context show>router>mld

Description This command displays MLD group information.

Parameters *grp-ipv6-address* — Specifies the IPv6 group address.

Values ipv6-address x:x:x:x:x:x:x:x (eight 16-bit pieces)
x:x:x:x:x:x:d.d.d.d
x: [0..FFFF]H
d: [0..255]D

Output

```
*A:SR7# show router mld group
===============================================================================
MLD Groups
===============================================================================
No Matching Entries
===============================================================================
*A:SR7#


*A:SR7# show router mld interface
===============================================================================
MLD Interfaces
===============================================================================
Interface               Adm  Oper Cfg/Opr         Num             Policy
   Querier                       Version         Groups
-------------------------------------------------------------------------------
Host4_Srce1_IPv6        Up   Up   2/2             0               none
   FE80::216:4DFF:FED4:4D5B
Host1                   Up   Up   2/2             0               none
   FE80::216:4DFF:FED4:4D5B
Host2                   Up   Up   2/2             0               none
   FE80::216:4DFF:FE51:3728
Host3_vlan1             Up   Up   2/2             0               none
   FE80::216:4DFF:FE51:3729
Host3_vlan2             Up   Up   2/2             0               none
   FE80::216:4DFF:FE51:3729
Host3_vlan3             Up   Up   2/2             0               none
   FE80::216:4DFF:FE51:3729
Host3_vlan4             Up   Up   2/2             0               none
   FE80::216:4DFF:FE51:3729
Host3_vlan5             Up   Up   2/2             0               none
*A:SR7# show router mld ssm-translate
```

```
===============================================================================
MLD SSM Tranlate Entries
===============================================================================
No Matching Entries
===============================================================================
*A:SR7#


*A:SR7# show router mld group
===============================================================================
MLD Groups
===============================================================================
(3FFE:100::2:100,FF05::1:1)
    Up Time : 0d 00:00:31
    Fwd List  : Host1

(3FFE:100::2:100,FF05::1:2)
    Up Time : 0d 00:00:31
    Fwd List  : Host1

(3FFE:100::2:100,FF05::1:3)
    Up Time : 0d 00:00:31
    Fwd List  : Host1

(3FFE:100::2:100,FF05::1:4)
    Up Time : 0d 00:00:31
    Fwd List  : Host1

(3FFE:100::2:100,FF05::1:5)
===============================================================================
*A:SR7#

*A:SR7# show router mld group ff05::1:1
===============================================================================
MLD Groups
===============================================================================
(3FFE:100::2:100,FF05::1:1)
    Up Time : 0d 00:00:40
    Fwd List  : Host1
-------------------------------------------------------------------------------
(*,G)/(S,G) Entries : 1
===============================================================================
*A:SR7#


*A:SR7# show router mld group ff05::1
===============================================================================
MLD Groups
===============================================================================
No Matching Entries
===============================================================================
```

interface

Syntax **interface** [*ip-int-name* | *ip-address*] [**group**] [*grp-ipv6-address*] [**detail**]

Context show>router>mld

Description This command displays MLD interface information.

Parameters *ip-int-name*|*ip-address* — Specifies the IP interface name or interface address.

group *grp-ipv6-address* — Specifies the IPv6 group address.

Values ipv6-address x:x:x:x:x:x:x:x (eight 16-bit pieces)
x:x:x:x:x:x:d.d.d.d
x: [0..FFFF]H
d: [0..255]D

detail — Displays detailed information.

Output

```
*A:SR7# show router mld interface Host1 detail
===============================================================================
MLD Interface Host1
===============================================================================
Interface              : Host1
Admin Status           : Up               Oper Status        : Up
Querier                : FE80::216:4DFF:FED4:4D5B
Querier Up Time        : 0d 00:02:18
Querier Expiry Time    : N/A              Time for next query: 0d 00:15:25
Admin/Oper version     : 2/2              Num Groups         : 6000
Policy                 : none
Max Groups Allowed     : No Limit         Max Groups Till Now: 6000
Query Interval         : 0                Query Resp Interval: 0
Last List Qry Interval : 0
-------------------------------------------------------------------------------
MLD Group
-------------------------------------------------------------------------------
Group Address : FF05::1:1
Last Reporter : FE80::1
Interface     : Host1                  Expires       : N/A
Up Time       : 0d 00:00:10            Mode          : include
V1 Host Timer : Not running            Type          : dynamic
Compat Mode   : MLD Version 2
-------------------------------------------------------------------------------
Source
    Expires       Type    Fwd/Blk
-------------------------------------------------------------------------------
3FFE:100::2:100
    0d 00:34:07   dynamic Fwd
-------------------------------------------------------------------------------
MLD Group
-------------------------------------------------------------------------------
Group Address : FF05::1:2
Last Reporter : FE80::1
Interface     : Host1                  Expires       : N/A
Up Time       : 0d 00:00:11            Mode          : include
V1 Host Timer : Not running            Type          : dynamic
Compat Mode   : MLD Version 2
-------------------------------------------------------------------------------
```

```
Source
    Expires       Type    Fwd/Blk
-------------------------------------------------------------------------------
3FFE:100::2:100
    0d 00:34:07   dynamic Fwd
-------------------------------------------------------------------------------
MLD Group
-------------------------------------------------------------------------------
Group Address : FF05::1:3
Last Reporter : FE80::1
Interface     : Host1                   Expires       : N/A
Up Time       : 0d 00:00:11             Mode          : include
V1 Host Timer : Not running             Type          : dynamic
Compat Mode   : MLD Version 2
-------------------------------------------------------------------------------
Source
    Expires       Type    Fwd/Blk
-------------------------------------------------------------------------------
3FFE:100::2:100
    0d 00:34:07   dynamic Fwd
-------------------------------------------------------------------------------
MLD Group
-------------------------------------------------------------------------------
Group Address : FF05::1:4
Last Reporter : FE80::1
Interface     : Host1                   Expires       : N/A
Up Time       : 0d 00:00:12             Mode          : include
V1 Host Timer : Not running             Type          : dynamic
Compat Mode   : MLD Version 2
-------------------------------------------------------------------------------
Source
    Expires       Type    Fwd/Blk
-------------------------------------------------------------------------------
3FFE:100::2:100
    0d 00:34:06   dynamic Fwd
-------------------------------------------------------------------------------
MLD Group
-------------------------------------------------------------------------------
Group Address : FF05::1:5
Last Reporter : FE80::1
Interface     : Host1                   Expires       : N/A
Up Time       : 0d 00:00:12             Mode          : include
V1 Host Timer : Not running             Type          : dynamic
Compat Mode   : MLD Version 2
-------------------------------------------------------------------------------
Source
    Expires       Type    Fwd/Blk
-------------------------------------------------------------------------------
3FFE:100::2:100
    0d 00:34:06   dynamic Fwd
-------------------------------------------------------------------------------
```

ssm-translate

Syntax **ssm-translate**

Context show>router>mld

Description This command displays the MLD SSM translate configration.

static

Syntax **static** [*ip-int-name* | *ip-address*]

Context show>router>mld

Description This command displays MLD static group/source configuration.

Parameters *ip-int-name*|*ip-address* — iSpecifies the IP interface name or IP address.

Output

```
*A:SR7# show router mld static
===============================================================================
MLD Static Group Source
===============================================================================
Source                                  Group
    Interface
-------------------------------------------------------------------------------
No Matching Entries
===============================================================================
*A:SR7


*A:SR7# show router mld statistics
================================================
MLD Interface Statistics
================================================
Message Type        Received       Transmitted
------------------------------------------------
Queries             0              640
Report V1           0              0
Report V2           10             0
Dones               0              0
------------------------------------------------
General Interface Statistics
------------------------------------------------
Bad Length        : 0
Bad Checksum      : 0
Unknown Type      : 0
Bad Receive If    : 0
Rx Non Local      : 0
Rx Wrong Version  : 0
Policy Drops      : 0
No Router Alert   : 0
Rx Bad Encodings  : 0
Rx Pkt Drops      : 0
Local Scope Pkts  : 10
Resvd Scope Pkts  : 0
------------------------------------------------
```

```
Source Group Statistics
-----------------------------------------------
(S,G)              : 0
(*,G)              : 0
===============================================
*A:SR7#
```

statistics

Syntax **statistics** [*ip-int-name* | *ipv6-address*]

Context show>router>mld

Description This command displays MLD statistics.

ip-int-name|*ipv6-address* — iSpecifies the IP interface name or IPv6 address.

status

Syntax **status**

Context show>router>mld

Description This command displays the MLD status.

Output

```
*A:SR7# show router mld status
===============================================================================
MLD Status
===============================================================================
Admin State                       : Up
Oper State                        : Up
Query Interval                    : 1024
Last Listener Query Interval      : 1
Query Response Interval           : 10
Robust Count                      : 2
===============================================================================
*A:SR7#


*A:SR7# show router mld interface Host1
===============================================================================
MLD Interface Host1
===============================================================================
Interface               Adm  Oper Cfg/Opr         Num             Policy
   Querier                       Version         Groups
-------------------------------------------------------------------------------
Host1                   Up   Up   2/2             5082            none
   FE80::216:4DFF:FED4:4D5B
-------------------------------------------------------------------------------
Interfaces : 1
===============================================================================
*A:SR7#
```

group

Syntax **group** [*group-name*] [**detail**]

Context show>router>msdp

Description This command displays information about MSDP groups.

Parameters *group-name* — Displays information about the specified group name. If no group-name is specified, information about all group names display.

detail — Displays detailed MSDP group infomration.

Output **MSDP Group Output —** The following table provides MSDP group field descriptions.

Label	Description
Group Name	Displays the MSDP group name.
Mode	Displays the groups of peers in a full mesh topology to limit excessive flooding of source-active messages to neighboring peers.
Act Srcs	Displays the configured maximum number of active source messages that will be accepted by MSDP.
Local Address	Displays the local end of a MSDP session.
Admin State	Displays the administrative state.
Receive Msg Rate	Displays rate that the messages are read from the TCP session.
Receive Msg Time	Displays the time of MSDP messages that are read from the TCP session within the configured number of seconds.
Receive Msg Thd	Displays the configured threshold number of MSDP messages can be processed before the MSDP message rate limiting function .
SA Limit	Displays the source-active limit.

Sample Output

```
*A:ALA-48>show>router>msdp# group
===============================================================================
MSDP Groups
===============================================================================
Group Name                      Mode       Act Srcs  Local Address
-------------------------------------------------------------------------------
main                            Mesh-group None None
loop1                           Mesh-group None None
loop2                           Mesh-group None None
loop3                           Mesh-group None None
loop4                           Mesh-group None None
loop5                           Mesh-group None None
-------------------------------------------------------------------------------
Groups : 6
=======================
```

```
*A:ALA-48>show>router>msdp#


*A:ALA-48>show>router>msdp# group test
===============================================================================
MSDP Groups
===============================================================================
Group Name                        Mode       Act Srcs  Local Address
-------------------------------------------------------------------------------
test                              Mesh-group 50000     10.10.10.103
-------------------------------------------------------------------------------
Groups : 1
===============================================================================
*A:ALA-48>show>router>msdp#


*A:ALA-48>show>router>msdp# group test detail
===============================================================================
MSDP Groups
===============================================================================
Group Name         : test
-------------------------------------------------------------------------------
Local Address      : 10.10.10.103
Admin State        : Up                Receive Msg Rate   : None
Receive Msg Time   : None              Receive Msg Thd    : None
Mode               : Mesh-group        SA Limit           : 50000
Export Policy      : None Specified / Inherited
Import Policy      : None Specified / Inherited

-------------------------------------------------------------------------------
Groups : 1
===============================================================================
*A:ALA-48>show>router>msdp#
```

peer

Syntax **peer** [*ip-address*] [**group** *group-name*] [**detail**]

Context show>router>msdp

Description This command displays information about an MSDP peer.

Parameters *ip-address* — Displays information about the specified IP address. If no IP address specified, information about all MSDP IP addresses display.

group *group-name* — Displays information about the specified group name. If no *group-name* is specified, information about all MSDP peers display.

detail — Displays detailed MSDP peer infomration.

Output **MSDP Peer Output —** The following table provides MSDP field descriptions.

Label	Description
Peer	Displays the IP address of the peer.

Label	Description (Continued)
Local Address	Displays the local IP address.
State	Displays the current state of the peer.
Last State Change	Displays the date and time of the peer's last state change.
SA Learn	The number of SAs learned through a peer.

Sample Output

```
A:ALA-48# show router msdp peer
===============================================================================
MSDP Peers
===============================================================================
Peer             Local Address    State       Last State Change     SA Learnt
-------------------------------------------------------------------------------
10.20.1.1        10.20.1.6        Established 08/30/2002 03:22:131008
-------------------------------------------------------------------------------
Peers : 1
===============================================================================
A:ALA-48#


A:ALA-48# show router msdp peer detail
===============================================================================
MSDP Peers
-------------------------------------------------------------------------------
Peer Address       : 10.20.1.1
-------------------------------------------------------------------------------
Group Name         : None
Local Address      : 10.20.1.6
Last State Change  : 08/30/2002 03:22:13 Last Act Src Limit : N/A
Peer Admin State   : Up                 Default Peer       : No
Peer Connect Retry : 0                  State              : Established
SA accepted        : 1008               SA received        : 709
State timer expires: 18                 Peer time out      : 62
Active Source Limit: None               Receive Msg Rate   : 0
Receive Msg Time   : 0                  Receive Msg Thd    : 0
Auth Status        : Disabled           Auth Key           : None
Export Policy      : None Specified / Inherited
Import Policy      : None Specified / Inherited
-------------------------------------------------------------------------------
Peers : 1
===============================================================================
A:ALA-48#
```

source

Syntax **source** [*ip-address/mask*] [**type** {**configured** | **dynamic** | **both**}] [**detail**]

Context show>router>msdp

Description This command displays the discovery method for this multicast source.

Parameters **configured** — Displays user-created sources.

dynamic — Displays dynamically created sources.

both — Displays both user-configured and dynamically created sources.

detail — Displays detailed MSDP source information.

Output **MSDP Source Output —** The following table provides MSDP source field descriptions.

Label	Description
Source	Displays the IP address of the peer.
Type	Displays the type of peer.
SA limit	Displays the local IP address.
State	Displays the current state of the peer.
Num excd	Indicates the number of times the global active source limit has been exceeded.
Last exceeded	Displays the date and time of the peer's last state change.

source-active

Syntax **source-active** [**group** *ip-address* | **local** | **originator** *ip-address* | **peer** *ip-address* | **source** *ip-address* |{**group** *ip-address* **source** *ip-address*}][**detail**]

Context show>router>msdp

Description This command displays source active messages accepted by MSDP.

Parameters **group** *ip-address* — Displays information about the specified group IP address.

local — Displays information about local source-active messages.

originator *ip-address* — Displays information about the specified originator IP address.

peer *ip-address* — Displays information about the specified peer IP address.

source *ip-address* — Displays information about the specified source IP address.

group *ip-address* — Displays information about the specified group IP address.

detail — Displays detailed MSDP source-active information.

Output **MSDP Source-Active Output —** The following table provides MSDP source-active field descriptions.

Label	Description
Grp Address	Displays the IP address of the group.
Src Address	Displays the IP address of the source.
Origin RP	Displays the origination rendezvous point (RP) address.
Peer Address	Displays the address of the peer.
State Timer	The time-out value. If the value reaches zero, the SA is removed.

Sample Output

```
A:ALA-48# show router msdp source-active
===============================================================================
MSDP Source Active Info
===============================================================================
Grp Address      Src Address      Origin RP        Peer Address State Timer
-------------------------------------------------------------------------------
228.100.0.0      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.1      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.2      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.3      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.4      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.5      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.6      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.7      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.8      100.112.1.2      10.20.1.1        10.20.1.1 69
228.100.0.9      100.112.1.2      10.20.1.1        10.20.1.1 69
-------------------------------------------------------------------------------
MSDP Source Active : 10
===============================================================================
A:ALA-48#


A:ALA-48# show router msdp source-active detail
===============================================================================
MSDP Source Active
===============================================================================
Group Address      : 228.100.0.0        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
State Timer        : 64                 Up Time            : 3d 01:44:25
Group Address      : 228.100.0.1        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
State Timer        : 64                 Up Time            : 48d 18:22:29
Group Address      : 228.100.0.2        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
State Timer        : 64                 Up Time            : 48d 18:22:29
Group Address      : 228.100.0.3        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
State Timer        : 64                 Up Time            : 48d 18:22:29
Group Address      : 228.100.0.4        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
State Timer        : 64                 Up Time            : 48d 18:22:29
Group Address      : 228.100.0.5        Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1          Peer Address       : 10.20.1.1
```

```
State Timer        : 64                Up Time            : 48d 18:22:29
Group Address      : 228.100.0.6       Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1         Peer Address       : 10.20.1.1
State Timer        : 64                Up Time            : 48d 18:22:29
Group Address      : 228.100.0.7       Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1         Peer Address       : 10.20.1.1
State Timer        : 64                Up Time            : 48d 18:22:29
Group Address      : 228.100.0.8       Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1         Peer Address       : 10.20.1.1
State Timer        : 64                Up Time            : 48d 18:22:29
Group Address      : 228.100.0.9       Source Address     : 100.112.1.2
Origin RP          : 10.20.1.1         Peer Address       : 10.20.1.1
State Timer        : 64                Up Time            : 48d 18:22:29
-------------------------------------------------------------------------------
MSDP Source Active : 10
===============================================================================
A:ALA-48#
```

source-active-rejected

Syntax **source-active-rejected** [**peer-group** *name*] [**group** *ip-address*] [**source** *ip-address*] [**originator** *ip-address*] [**peer** *ip-address*]

Context show>router>msdp

Description This command displays source active messages rejected by MSDP.

Parameters **group** *ip-address* — Displays information about the peer group name of the Source Active entry that is rejected.

local — Displays information about local source-active messages.

originator *ip-address* — Displays information about the specified originator IP address.

peer *ip-address* — Displays information about the peer from which this rejected source active entry was last received.

source *ip-address* — Displays information about the source address of the source active entry that is rejected.

group *ip-address* — Displays information about the specified group IP address.

MSDP Source-Active Output — The following table provides MSDP source-active field descriptions.

Label	Description
Grp Address	Displays the IP address of the group.
Src Address	Displays the IP address of the source.
Origin RP	Displays the origination rendezvous point (RP) address.
Peer Address	Displays the address of the peer.

Label	Description (Continued)
Reject Reason	Displays the reason why this source active entry is rejected.

Sample Output

```
*A:ALA-48# show router msdp source-active-rejected
===============================================================================
MSDP Source Active Rejected Info
===============================================================================
Grp Address     Src Address     Origin RP       Peer Address    Reject Reason
-------------------------------------------------------------------------------
228.100.0.1     110.0.0.1       10.20.0.1       20.0.0.1        Import Policy
228.100.0.2     110.0.0.2       10.20.0.2       20.0.0.2        Export Policy
228.100.0.3     110.0.0.3       10.20.0.3       20.0.0.3        RPF Failure
228.100.0.4     110.0.0.4       10.20.0.4       20.0.0.4        Limit Exceeded
228.100.0.5     110.0.0.5       10.20.0.5       20.0.0.5        Limit Exceeded
228.100.0.6     110.0.0.6       10.20.0.6       20.0.0.6        Limit Exceeded
228.100.0.7     110.0.0.7       10.20.0.7       20.0.0.7        Limit Exceeded
-------------------------------------------------------------------------------
SA Rejected Entries : 7
===============================================================================
*A:ALA-48#
```

statistics

Syntax **statistics** [**peer** *ip-address*]

Context show>router>msdp

Description This command displays statistics information related to a MSDP peer.

Parameters **peer** *ip-address* — Displays information about the specified peer IP address

Output **MSDP Statistics Output —** The following table provides MSDP statistics field descriptions.

Label	Description
Last State Change	Displays the date and time the peer state changed.
RPF Failures	Displays the number of reverse path forwarding (RPF) failures.
SA Msgs Sent	Displays the number of source-active messages sent.
SA req. Msgs Sent	Displays the number of source-active request messages sent.
SA res. Msgs Sent	Displays the number of source-active response messages sent.
KeepAlive Msgs Sent	Displays the number of keepalive messages sent.
Unknown Msgs Sent	Displays the number of unknown messages received.

Label	Description (Continued)
Last message Peer	Displays the time the last message was received from the peer.
Remote Closes	Displays the number of times the remote peer close.
SA Msgs Recvd	Displays the number of source-active messages received.
SA req. Msgs Recvd	Displays the number of source-active request messages received.
SA res. Msgs Recvd	Displays the number of source-active response messages received.
KeepAlive Msgs Recd	Displays the number of keepalive messages received.
Error Msgs Recvd	Displays the number of unknown messages received.

Sample Output

```
A:ALA-48# show router msdp statistics
===============================================================================
MSDP Statistics
===============================================================================
Glo ActSrc Lim Excd: 0
-------------------------------------------------------------------------------
Peer Address       : 10.20.1.1
-------------------------------------------------------------------------------
Last State Change  : 0d 11:33:16        Last message Peer  : 0d 00:00:17
RPF Failures       : 0                  Remote Closes      : 0
SA Msgs Sent       : 0                  SA Msgs Recvd      : 709
SA req. Msgs Sent  : 0                  SA req. Msgs Recvd : 0
SA res. Msgs Sent  : 0                  SA res. Msgs Recvd : 0
KeepAlive Msgs Sent: 694                KeepAlive Msgs Recd: 694
Unknown Msgs Sent  : 0                  Error Msgs Recvd   : 0
-------------------------------------------------------------------------------
Peers : 1
===============================================================================
A:ALA-48#
```

status

Syntax **status**

Context show>router>msdp

Description This command displays MSDP status information.

Output **MSDP Status Output —** The following table provides MSDP status field descriptions.

Label	Description
Admin State	Displays the administrative state.
Local Address	Displays the local IP address.

Label	Description (Continued)
Active Src Limit	Displays the active source limit.
Act Src Lim Excd	Displays the active source limit which has been exceeded.
Num. Peers	Displays the number of peers.
Num. Peers Estab	Displays the number of peers established.
Num. Source Active	Displays the number of active sources.
Policies	The policy to export source active state from the source active list into MSDP.
Data Encapsula-tion	The rendezvous point (RP) using MSDP to encapsulate multicast data received in MSDP register messages inside forwarded MSDP source-active messages - enabled or disabled.
Rate	The receive message rate.
Time	The receive message time.
Threshold	The number of MSDP messages that can be processed before the MSDP message rate limiting function is activated.
RPF Table	The name of the reverse path forwarding table.
Last mdsp Enabled	The time the last MDSP was triggered.

Sample Output

```
A:ALA-48# show router msdp status
===============================================================================
MSDP Status
===============================================================================
Admin State                       : Up
Local Address                     : None
Global Statistics
Active Src Limit                  : None
Act Src Lim Excd                  : 0
Num. Peers                        : 1
Num. Peers Estab                  : 1
Num. Source Active                : 10
Policies                          : None
Data Encapsulation                : Enabled
Receive Msg Rate
Rate                              : 0
Time                              : 0
Threshold                         : 0
Last Msdp Enabled                 : 08/30/2002 03:21:43
===============================================================================
A:ALA-48#
```

mcac

Syntax **mcac**

Context show>router

Description This command enables the context to display multicast CAC related information.

policy

Syntax **policy** [*policy-name* [**bundle** *bundle-name*] [**protocol** *protocol-name*] [**interface** *if-name*] [**detail**]]

Context show>router>mcac

Description This command displays MCAC policy information.

Parameters *policy-name* — Specifies an existing multicast CAC (MCAC) policy name.

bundle *bundle-id* **—** Specifies an existing multicast bundle name.

protocol *protocol-name* **—** specifies an applicable protocol to display.

Values igmp, pim, igmpSnpg

interface *if-name* **—** Specifies an interface name to display.

detail — Displays detailed information.

Sample Output

```
*A:ALA-48>show>router>mcac# policy
===============================================================================
Multicast CAC Policies
===============================================================================
Policy                          Description
-------------------------------------------------------------------------------
btv_fr                          foreign TV offering
btv_vl                          eastern TV offering
policy1                         this is policy1
policy2                         this is policy 2
-------------------------------------------------------------------------------
Policies : 4
===============================================================================
*A:ALA-48>show>router>mcac#


*A:ALA-48>show>router>mcac# policy btv_fr
===============================================================================
Multicast CAC policy
===============================================================================
Policy           : btv_fr
Description      : foreign TV offering
Default Action   : discard
Bundle(s)        : FOR
===============================================================================
```

```
*A:ALA-48>show>router>mcac#
```

statistics

Syntax **statistics policy** *policy-name* [**bundle** *bundle-name*] [**protocol** *protocol-name*] [**interface** *if-name*] **statistics**

Context show>router>mcac

Description This command displays MCAC statistics.

Parameters *policy-name* — Specifies an existing multicast CAC (MCAC) policy name.

bundle *bundle-id* **—** Displays statistics for the specified existing multicast bundle name.

protocol *protocol-name* **—** Displays statistics for the specified applicable protocol.

Values igmp, pim, igmpSnpg

interface *if-name* **—** Displays statistics for the specified interface name.

detail — Displays detailed information.

bindings

Syntax **bindings active**

Context show>router>ldp

Description This command displays LDP bindings information.

Sample Output

```
*A:Dut-A# show router ldp bindings active

===============================================================================
Legend: U - Label In Use,  N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static       (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
===============================================================================
LDP IPv4 Prefix Bindings (Active)
===============================================================================
Prefix                  Op   IngLbl    EgrLbl    EgrIntf/LspId  EgrNextHop
-------------------------------------------------------------------------------
10.20.1.1/32            Pop  131071      --        --             --
10.20.1.2/32            Push   --      131071    1/1/1          10.10.1.2
10.20.1.2/32            Swap 131070    131071    1/1/1          10.10.1.2
10.20.1.2/32            Push   --      262141BU  1/1/2          10.10.2.3
10.20.1.2/32            Swap 131070    262141BU  1/1/2          10.10.2.3
10.20.1.3/32            Push   --      131069BU  1/1/1          10.10.1.2
10.20.1.3/32            Swap 131069    131069BU  1/1/1          10.10.1.2
10.20.1.3/32            Push   --      262143    1/1/2          10.10.2.3
```

```
10.20.1.3/32            Swap 131069    262143    1/1/2          10.10.2.3
10.20.1.4/32            Push   --      131068    1/1/1          10.10.1.2
10.20.1.4/32            Swap 131068    131068    1/1/1          10.10.1.2
10.20.1.4/32            Push   --      262140BU  1/1/2          10.10.2.3
10.20.1.4/32            Swap 131068    262140BU  1/1/2          10.10.2.3
10.20.1.5/32            Push   --      131067BU  1/1/1          10.10.1.2
10.20.1.5/32            Swap 131067    131067BU  1/1/1          10.10.1.2
10.20.1.5/32            Push   --      262139    1/1/2          10.10.2.3
10.20.1.5/32            Swap 131067    262139    1/1/2          10.10.2.3
10.20.1.6/32            Push   --      131066    1/1/1          10.10.1.2
10.20.1.6/32            Swap 131066    131066    1/1/1          10.10.1.2
10.20.1.6/32            Push   --      262138BU  1/1/2          10.10.2.3
10.20.1.6/32            Swap 131066    262138BU  1/1/2          10.10.2.3
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
No. of IPv4 Prefix Active Bindings: 10
===============================================================================

===============================================================================
LDP IPv6 Prefix Bindings (Active)
===============================================================================
Prefix                                  Op              IngLbl    EgrLbl
EgrNextHop                              EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP Generic IPv4 P2MP Bindings (Active)
===============================================================================
P2MP-Id                                 Interface
RootAddr                                Op              IngLbl    EgrLbl
EgrNH                                   EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP Generic IPv6 P2MP Bindings (Active)
===============================================================================
P2MP-Id                                 Interface
RootAddr                                Op              IngLbl    EgrLbl
EgrNH                                   EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
===============================================================================
Source
Group                                   Interface
RootAddr                                Op              IngLbl    EgrLbl
EgrNH                                   EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================
```

```
===============================================================================
LDP In-Band-SSM IPv6 P2MP Bindings (Active)
===============================================================================
Source
Group                                       Interface
RootAddr                                    Op              IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
===============================================================================
Source
Group                                       RD              Op
RootAddr                                    Interface       IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
===============================================================================
Source
Group                                       RD              Op
RootAddr                                    Interface       IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================


*A:Dut-A# show router ldp bindings

===============================================================================
LDP Bindings (IPv4 LSR ID 1.1.1.1:0)
             (IPv6 LSR ID ::[0])
===============================================================================
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        S - Status Signaled Up,  D - Status Signaled Down
        E - Epipe Service, V - VPLS Service, M - Mirror Service
        A - Apipe Service, F - Fpipe Service, I - IES Service, R - VPRN service
        P - Ipipe Service, WP - Label Withdraw Pending, C - Cpipe Service
        BU - Alternate For Fast Re-Route, TLV - (Type, Length: Value)
===============================================================================
LDP IPv4 Prefix Bindings
===============================================================================
Prefix             Peer            IngLbl     EgrLbl EgrIntf/    EgrNextHop
                                                     LspId
-------------------------------------------------------------------------------
10.20.1.1/32       10.20.1.2       131071U     --     --          --
10.20.1.1/32       10.20.1.3       131071U     --     --          --
10.20.1.2/32       10.20.1.2         --       131071 1/1/1       10.10.1.2
10.20.1.2/32       10.20.1.3       131070U    262141 1/1/2       10.10.2.3
10.20.1.3/32       10.20.1.2       131069U    131069 1/1/1       10.10.1.2
10.20.1.3/32       10.20.1.3         --       262143 1/1/2       10.10.2.3
10.20.1.4/32       10.20.1.2       131068N    131068 1/1/1       10.10.1.2
```

```
10.20.1.4/32       10.20.1.3       131068BU    262140 1/1/2       10.10.2.3
10.20.1.5/32       10.20.1.2       131067U    131067 1/1/1       10.10.1.2
10.20.1.5/32       10.20.1.3       131067N    262139 1/1/2       10.10.2.3
10.20.1.6/32       10.20.1.2       131066N    131066 1/1/1       10.10.1.2
10.20.1.6/32       10.20.1.3       131066BU   262138 1/1/2       10.10.2.3
-------------------------------------------------------------------------------
No. of IPv4 Prefix Bindings: 12
===============================================================================

===============================================================================================
LDP IPv6 Prefix Bindings
===============================================================================================
Prefix                                      IngLbl                    EgrLbl
Peer                                        EgrIntf/LspId
EgrNextHop
-----------------------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================================

===============================================================================================
LDP Generic IPv4 P2MP Bindings
===============================================================================================
P2MP-Id
RootAddr                                    Interface       IngLbl    EgrLbl
EgrNH                                       EgrIf/LspId
Peer
-----------------------------------------------------------------------------------------------
100
1.1.1.1                                     Unknw             --      131051
90.90.90.2                                  1/1/6
2.2.2.2:0

104
1.1.1.1                                     Unknw             --      131050
90.90.90.2                                  1/1/6
2.2.2.2:0

600
1.1.1.1                                     Unknw             --      131049
90.90.90.2                                  1/1/6
2.2.2.2:0

700
1.1.1.1                                     Unknw             --      131048
90.90.90.2                                  1/1/6
2.2.2.2:0

800
1.1.1.1                                     Unknw             --      131047
90.90.90.2                                  1/1/6
2.2.2.2:0

900
1.1.1.1                                     Unknw             --      131046
90.90.90.2                                  1/1/6
2.2.2.2:0

1500
1.1.1.1                                     Unknw             --      131045
```

```
90.90.90.2                                1/1/6
2.2.2.2:0

100
6.6.6.6                                   Unknw             --      131044
90.90.90.2                                1/1/6
2.2.2.2:0

900
6.6.6.6                                   Unknw             --      131043
90.90.90.2                                1/1/6
2.2.2.2:0

-------------------------------------------------------------------------------
No. of Generic IPv4 P2MP Bindings: 9
===============================================================================

===============================================================================
LDP Generic IPv6 P2MP Bindings
===============================================================================
P2MP-Id
RootAddr                                  Interface       IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
Peer
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-SSM IPv4 P2MP Bindings
===============================================================================
Source
Group
RootAddr                                  Interface       IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
Peer
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-SSM IPv6 P2MP Bindings
===============================================================================
Source
Group
RootAddr                                  Interface       IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
Peer
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================

===============================================================================
LDP In-Band-VPN-SSM IPv4 P2MP Bindings
===============================================================================
Source
Group                                     RD
RootAddr                                  Interface         IngLbl    EgrLbl
EgrNH                                     EgrIf/LspId
```

```
Peer
-------------------------------------------------------------------------------
1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
3.3.3.3                                   Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

-------------------------------------------------------------------------------
No. of In-Band-VPN-SSM IPv4 P2MP Bindings: 3
===============================================================================

===============================================================================
LDP In-Band-VPN-SSM IPv6 P2MP Bindings
===============================================================================
===============================================================================
Source
Group                                      RD
RootAddr                                   Interface         IngLbl    EgrLbl
EgrNH                                      EgrIf/LspId
Peer
-------------------------------------------------------------------------------
1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

1.1.1.1
225.0.0.1                                 1.1.1.1:100
2000::3000                                Unknwn              --         100
60.60.60.1                                1/1/1
2.2.2.2:100

-------------------------------------------------------------------------------
No. of In-Band-VPN-SSM IPv6 P2MP Bindings: 3
===============================================================================

===============================================================================
LDP Service FEC 128 Bindings
===============================================================================
```

```
Type                                            VCId       SDPId     IngLbl  LMTU
Peer                                            SvcId                EgrLbl  RMTU
-------------------------------------------------------------------------------
?-Eth                                           100        R. Src      --    None
2.2.2.2:0                                       Ukwn                 131023D 986

?-Eth                                           500        R. Src      --    None
2.2.2.2:0                                       Ukwn                 131022D 1386

?-Eth                                           2001       R. Src      --    None
2.2.2.2:0                                       Ukwn                 131019D 986

?-Eth                                           2003       R. Src      --    None
2.2.2.2:0                                       Ukwn                 131017D 986

?-Ipipe                                         1800       R. Src      --    None
2.2.2.2:0                                       Ukwn                 131014D 1486

-------------------------------------------------------------------------------
No. of VC Labels: 5
===============================================================================

===============================================================================
LDP Service FEC 129 Bindings
===============================================================================
SAII                                              AGII        IngLbl    LMTU
TAII                                              Type        EgrLbl    RMTU
Peer                                              SvcId       SDPId
-------------------------------------------------------------------------------
No Matching Entries Found
===============================================================================
```

mvpn

Syntax **mvpn**

Context show>router *router-instance*

Description This command displays Multicast VPN related information. The router instance must be specified.

Sample Output

```
*A:Dut-C# show router 1 mvpn
===============================================================================
MVPN 1 configuration data
===============================================================================
signaling          : Bgp                  auto-discovery     : Default
UMH Selection      : Highest-Ip           SA withdrawn       : Disabled
intersite-shared   : Enabled              Persist SA         : Disabled
vrf-import         : N/A
vrf-export         : N/A
vrf-target         : unicast
C-Mcast Import RT  : target:10.20.1.4:105

ipmsi              : rsvp IpmsiTemplate
```

```
i-pmsi P2MP AdmSt  : Up
i-pmsi Tunnel Name : IpmsiTemplate-1-74216
enable-bfd-root    : false                enable-bfd-leaf    : false
Mdt-type           : sender-receiver

BSR signalling     : none
Wildcard s-pmsi    : false
spmsi              : rsvp SpmsiTemplate
s-pmsi P2MP AdmSt  : Up
max-p2mp-spmsi     : 4000
data-delay-interval: 3 seconds
enable-asm-mdt     : N/A
data-threshold     : 224.0.0.0/4 --> 1 kbps
rx-threshold       : 224.0.0.0/4 --> pe-thres-add 2 --> pe-thres-delete 4
data-threshold     : ff00::/8 --> 1 kbps
rx-threshold       : ff00::/8 --> pe-thres-add 2 --> pe-thres-delete 4

===============================================================================

===============================================================================
*A:Dut-D# show router 21 mvpn
===============================================================================
MVPN 21 configuration data
===============================================================================
signaling          : Bgp                  auto-discovery     : Default
UMH Selection      : Highest-Ip           SA withdrawn       : Disabled
intersite-shared   : Enabled              Persist SA         : Disabled
vrf-import         : N/A
vrf-export         : N/A
vrf-target         : unicast
C-Mcast Import RT  : target:10.20.1.4:106

ipmsi              : ldp
i-pmsi P2MP AdmSt  : Up
i-pmsi Tunnel Name : mpls-if-74217
Mdt-type           : sender-receiver

BSR signalling     : none
Wildcard s-pmsi    : false
spmsi              : ldp
s-pmsi P2MP AdmSt  : Up
max-p2mp-spmsi     : 4000
data-delay-interval: 3 seconds
enable-asm-mdt     : N/A
data-threshold     : 224.0.0.0/4 --> 1 kbps
rx-threshold       : 224.0.0.0/4 --> pe-thres-add 2 --> pe-thres-delete 4
data-threshold     : ff00::/8 --> 1 kbps
rx-threshold       : ff00::/8 --> pe-thres-add 2 --> pe-thres-delete 4

===============================================================================
*A:Dut-D#
```

mvpn-list

Syntax **mvpn-list** [**type** <*type*>] [**auto-discovery** <*auto-discovery*>] [**signalling** <*signalling*>] [**group** <*group*>]

Context show>router

Parameters *type* — Specifies the MVPN type.

Values pim | rsvp | ldp

auto-discovery — Specifies the auto-discovery mode.

Values none | default | mdt-s

signalling — Specifies the signalling type.

Values bgp | pim

group — Specifies the group address.

Description This command displays Multicast VPN list.

Sample Output

```
*A:Dut-D# show router mvpn-list

Legend: Sig = Signal  Pim-a = pim-asm  Pim-s = pim-ssm  A-D = Auto-Discovery
SR = Sender-Receiver  SO = Sender-Only  RO = Receiver-Only

===============================================================================
MVPN List
===============================================================================
VprnID    A-D      iPmsi/sPmsi GroupAddr/Lsp-Template          IPv4(S,G)/(*,G)
           Sig      Mdt-Type                                    IPv6(S,G)/(*,G)
-------------------------------------------------------------------------------
100       None     Pim-a/None  224.100.201.101                 0/0
           Pim      N/A                                         0/0
-------------------------------------------------------------------------------
Total Mvpns : 1
===============================================================================

===============================================================================
Total                              PIM            RSVP           MLDP
-------------------------------------------------------------------------------
I-PMSI tunnels                     1              0              0
TX S-PMSI tunnels                  0              0              0
RX S-PMSI tunnels                  0              0              0
RX PSEUDO S-PMSI tunnels   0              0              0
-------------------------------------------------------------------------------
Total IPv4 (S,G)/(*,G) : 0/0
Total IPv6 (S,G)/(*,G) : 0/0
===============================================================================
*A:Dut-D#
```

tunnel-table

Syntax **tunnel-table** [*ip-address [/mask]*] [*protocol* | **sdp** *sdp-id*]
tunnel-table [**summary**]

Context show>router

Description This command displays tunnel table information.

Parameters *protocol* — Specifies the protocol.

Values bgp | ldp | rsvp | sdp

sdp-id — Specifies the SDP ID.

Values 1..17407

Output

```
A:Dut-C# show router tunnel-table

===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination       Owner     Encap TunnelId  Pref     Nexthop        Metric
-------------------------------------------------------------------------------
4.0.0.1/32        isis (0)  MPLS  524309    11       1.3.4.4        10
10.20.1.2/32      isis (0)  MPLS  524312    11       1.2.3.2        10
10.20.1.4/32      isis (0)  MPLS  524310    11       1.3.4.4        10
10.20.1.5/32      isis (0)  MPLS  524311    11       1.2.3.2        20
-------------------------------------------------------------------------------
Flags: B = BGP backup route available
       E = inactive best-external BGP route
===============================================================================
A:Dut-C#
```

```
*A:Dut-C# show router tunnel-table

===============================================================================
IPv4 Tunnel Table (Router: Base)
===============================================================================
Destination       Owner     Encap TunnelId  Pref     Nexthop        Metric
-------------------------------------------------------------------------------
10.20.1.1/32      ospf (0)  MPLS  524395    10       1.1.3.1        1000
10.20.1.2/32      ospf (0)  MPLS  524399    10       2.2.3.2        1000
10.20.1.4/32      ospf (0)  MPLS  524398    10       1.3.5.5        2000
10.20.1.4/32      ospf (0)  MPLS  524398    10       2.2.3.2        2000
10.20.1.5/32      ospf (0)  MPLS  524397    10       1.3.5.5        1000
10.20.1.6/32      ospf (0)  MPLS  524396    10       1.3.5.5        2000
-------------------------------------------------------------------------------
Flags: B = BGP backup route available
       E = inactive best-external BGP route
===============================================================================
*A:Dut-C#


*A:Dut-C# show router tunnel-table sdp 17407
===============================================================================
Tunnel Table (Router: Base)
```

```
===============================================================================
Destination        Owner Encap TunnelId  Pref     Nexthop        Metric
-------------------------------------------------------------------------------
127.0.68.0/32      sdp   MPLS  17407     5        127.0.68.0     0
===============================================================================
```

```
*A:Dut-C>config>router>mpls>lsp# show router tunnel-table detail

===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination      : 1.0.0.2/32
NextHop          : 1.1.4.4
Tunnel Flags     : exclude-for-lfa
Age              : 00h17m58s
Owner            : rsvp                Encap            : MPLS
Tunnel ID        : 115                 Preference       : 7
Tunnel Label     : 262054              Tunnel Metric    : 9
Tunnel MTU       : 1496
LSP ID           : 26116               Bypass Label     : 0
LSP Bandwidth    : 0                   LSP Weight       : 2
-------------------------------------------------------------------------------
```

```
show router tunnel-table detail

===============================================================================
Tunnel Table (Router: Base)
===============================================================================
Destination      : 4.0.0.1/32
NextHop          : 1.3.4.4
Tunnel Flags     : has-lfa exclude-for-igpshortcuts
Age              : 20h34m58s
Owner            : isis (0)            Encap            : MPLS
Tunnel ID        : 524309              Preference       : 11
Tunnel Label     : 20001               Tunnel Metric    : 10
Tunnel MTU       : 1382
-------------------------------------------------------------------------------
Destination      : 10.20.1.2/32
NextHop          : 1.2.3.2
Tunnel Flags     : has-lfa exclude-for-igpshortcuts
Age              : 20h35m04s
Owner            : isis (0)            Encap            : MPLS
Tunnel ID        : 524312              Preference       : 11
Tunnel Label     : 21002               Tunnel Metric    : 10
Tunnel MTU       : 1382
-------------------------------------------------------------------------------
Destination      : 10.20.1.4/32
NextHop          : 1.3.4.4
Tunnel Flags     : has-lfa exclude-for-igpshortcuts
Age              : 20h34m58s
Owner            : isis (0)            Encap            : MPLS
Tunnel ID        : 524310              Preference       : 11
Tunnel Label     : 21004               Tunnel Metric    : 10
```

```
Tunnel MTU       : 1382
-------------------------------------------------------------------------------
Destination      : 10.20.1.5/32
NextHop          : 1.2.3.2
Tunnel Flags     : has-lfa exclude-for-igpshortcuts
Age              : 20h34m58s
Owner            : isis (0)             Encap            : MPLS
Tunnel ID        : 524311               Preference       : 11
Tunnel Label     : 21005                Tunnel Metric    : 20
Tunnel MTU       : 1382
-------------------------------------------------------------------------------
Number of tunnel-table entries          : 4
Number of tunnel-table entries with LFA : 4
===============================================================================
A:Dut-C#
```

Clear Commands

database

Syntax **database** [**interface** *ip-int-name*|*ip-address*] **group** *grp-ip-address* [**source** *src-ip-address*]
database grp-interface *interface-name* [**fwd-service** *service-id*]
database [**interface** *ip-int-name*|*ip-address*] **group** *grp-ip-address* **source** *src-ip-address*
database host [*ip-address*]
database interface *ip-int-name*|*ip-address* [**group** *grp-ip-address*] [**source** *src-ip-address*]

Context clear>router>igmp

Description This command clears IGMP or PIM database statistics on a specified interface or IP address.

Parameters **interface** *ip-int-name* — Clears the IGMP or PIM database on the specified interface.

interface *ip-address* — Clears the IGMP or PIM database on the specified IP address.

group *group-ip-address* — Clears the multicast group address(ipv4/ipv6) or zero in the specified address group.

source *ip-address* — Clears the IGMP or PIM database from the specified source IP address.

database

Syntax **database** [**interface** *ip-int-name*|*mt-int-name*|*int-ip-address*] [**group** *grp-ip-address* [**source** *ip-address*]] [*family*]

Context clear>router>pim

Description This command clears IGMP or PIM database statistics on a specified interface or IP address.

Parameters **interface** *ip-int-name* — Clears the IGMP or PIM database on the specified interface.

interface *mt-int-name* — Clears the default core group address of the Multicast Distribution Tree (MDT) for the VPRN instance. The Multicast Tunnel (MT) interface for a VPRN is created when this object is set to a valid group address.

Syntax: *vprn-id*-mt-*grp-ip-addres*s

interface *ip-address* — Clears the IGMP or PIM database on the specified IP address.

group *group-ip-address* — Clears the multicast group address(ipv4/ipv6) or zero in the specified address group.

source *ip-address* — Clears the IGMP or PIM database from the specified source IP address.

family — Clears either IPv4 or IPv6 information.

mpls-if-name — Clears the MPLS interface name.

Syntax: mpls-if-*index*

statistics

Syntax **statistics** [**interface** *ip-int-name* | *ip-address*]

Context clear>router>igmp

Description This command clears IGMP statistics on a specified interface or IP address.

Note that interface and group/source cannot be specified at the same time.

Parameters **interface** *ip-int-name* **—** Clears IGMP statistics on the specified interface.

interface *ip-address* **—** Clears IGMP statistics on the specified IP address.

s-pmsi

Syntax **s-pmsi** [*mdSrcAddr*] [*mdGrpAddr*] [*vprnSrcAddr vprnGrpAddr*]

Context clear>router>pim

Description This command clears PIM selective provider multicast service interface cache.

Parameters *mdSrcAddr* — Clears the specified source address used for Multicast Distribution Tree (MDT).

mdGrpAddr — Clears the specified group address used for Multicast Distribution Tree (MDT).

vprnSrcAddr — Clears the specified source address of the multicast sender.

vprnGrpAddr — Clears the specified multicast group address.

statistics

Syntax **statistics** [{[**interface** *ip-int-name* | *ip-address* | *mt-int-name*]} {[**group** *grp-ip-address* [**source** *ip-address*]]}] [*family*]]

Context clear>router>pim

Description This command clears PIM statistics on a specified interface or IP address.

Note that an interface and group or source cannot be specified at the same time.

Parameters **interface** *ip-int-name* **—** Clears PIM statistics on the specified interface.

interface *ip-address* **—** Clears PIM statistics on the specified IP address.

interface *mt-int-name* **—** Clears the default core group address of the Multicast Distribution Tree (MDT) for the VPRN instance. The Multicast Tunnel (MT) interface for a VPRN is created when this object is set to a valid group address.

syntax: *vprn-id*-mt-*grp-ip-addres*s

group *grp-ip-address* **—** When only the group address is specified and no source is specified, (*,G) statistics are cleared. When the group address is specified along with the source address, then the (S,G) statistics are reset to zero.

source *ip-address* **—** When the source address is specified along with the group address, then the (S,G) statistics are reset to zero.

family — Clears either IPv4 or IPv6 information.

version

Syntax **version** [**interface** *ip-int-name* | *ip-address*]

Context clear>router>igmp

Description This command clears IGMP statistics on a specified interface or IP address.

Parameters **interface** *ip-int-name* **—** Clears IGMP or PIM statistics on the specified interface.

interface *ip-address* **—** Clears IGMP or PIM statistics on the specified IP address.

mld

Syntax **mld**

Context clear>router

Description This command enables the context to to clear and reset Multicast Listener Discovery (MLD) entities.

database

Syntax **database** [**interface** *ip-int-name*|*ipv6-address*] [**group** *ip-address* [**source** *ip-address*]]

Context clear>router>mld

Description This command clears Multicast Listener Discovery (MLD) database parameters.

Parameters **interface *ip-int-name*** **—** Clears database information for the specified Multicast Listener Discovery (MLD) interface name.

interface *ipv6-address* **—** Clears database information for the specified Multicast Listener Discovery (MLD) interface IPv6 address.

group *ip-address* **—** Clears database information for the specified Multicast Listener Discovery (MLD) group IP address.

source *ip-address* **—** Clears database information for the specified Multicast Listener Discovery (MLD) source IP address.

statistics

Syntax **statistics** [*ip-int-name*|*ipv6-address*]

Context clear>router>mld

Description This command clears Multicast Listener Discovery (MLD) statistics parameters.

Parameters ***ip-int-name*** — Clears statistics for the specified Multicast Listener Discovery (MLD) interface name.

ipv6-address — Clears statistics for the specified Multicast Listener Discovery (MLD) IPv6 address.

version

Syntax **version** [*ip-int-name*|*ip-address*]

Context clear>router>mld

Description This command clears Multicast Listener Discovery (MLD) version parameters.

Parameters ***ip-int-name*** — Clears version information for the specified Multicast Listener Discovery (MLD) interface name.

ip-address — Clears version information for the specified Multicast Listener Discovery (MLD) IP address.

msdp

Syntax **msdp**

Context clear>router

Description This command enables the context to clear and reset Multicast Source Discovery protocol (MSDP) entities and statistics.

cache

Syntax **cache** [**peer** *ip-address*] [**group** *ip-address*] [**source** *ip-address*] [**originrp** *ip-address*]

Context clear>router>msdp

Description This command clears the MSDP cache.

Parameters **peer** *ip-address* — Clears the cache of the IP address of the peer to which Multicast Source Discovery protocol (MSDP) source-active (SA) requests for groups matching this entry's group range were sent.

group *ip-address* — Clears the group IP address of the SA entry.

source *ip-address* — Clears the source IP address of the SA entry.

originrp *ip-address* — Clears the origin rendezvous point(RP) address type of the SA entry.

statistics

Syntax **statistics** [**peer** *ip-address*]

Context clear>router>msdp

Description **peer** *ip-address* — Clears the statistics of the IP address of the peer to which Multicast Source Discovery Protocol (MSDP) source-active (SA) requests for groups matching this entry's group range were sent.

neighbor

Syntax **neighbor** [*ip-int-name* | *ip-address*] [*family*]

Context clear>router>pim

Description This command clears PIM neighbor data on a specified interface or IP address.

Parameters *ip-int-name* — Clears PIM neighbor on the specified interface.

ip-address — Clears PIM neighbor on the specified IP address.

family — Clears either IPv4 or IPv6 information.

igmp-snooping

Syntax **igmp-snooping**

Context clear>service>id

Description This command enables the context to clear IGMP snooping-related data.

port-db

Syntax **port-db** {**sap** *sap-id* | **sdp** *sdp-id:vc-id*} [**group** *grp-address* [**source** *ip-address*]]

Context clear>service>id>igmp-snooping

Description Clears the information on the IGMP snooping port database.

Parameters **sap** *sap-id* — Clears IGMP snooping statistics matching the specified SAP ID and optional encapsulation value. The *sap-id* can be in one of the following formats:

Encapsulation type	Syntax	Example
null	port-id	1/1/3
dot1q	port-id :qtag1	1/1/3:100
qinq	port-id :qtag1.qtag2	1/1/3:100.200

qtag1, qtag2 — The encapsulation value on the specified port ID.

Values 0 — 4094

sdp *sdp-id* — Clears only IGMP snooping entries associated with the specified mesh SDP or spoke SDP. For a spoke SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

Values 1 — 17407

vc-id — The virtual circuit ID on the SDP ID for which to clear information.

Default For mesh SDPs only, all VC IDs

Values 1 — 4294967295

group *grp-address* — Clears IGMP snooping statistics matching the specified group address.

source *ip-address* — Clears IGMP snooping statistics matching one particular source within the multicast group.

querier

Syntax **querier**

Context clear>service>id>igmp-snooping

Description Clears information on the IGMP snooping queriers for the VPLS service.

statistics

Syntax **statistics** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*]

Context clear>service>id>igmp-snooping

Description Clears IGMP snooping statistics for the VPLS service.

Parameters **sap** *sap-id* — Displays IGMP snooping statistics for a specific SAP. The *sap-id* can be in one of the following formats:

Encapsulation type	Syntax	Example
null	port-id	1/1/3
dot1q	port-id :qtag1	1/1/3:100
qinq	port-id :qtag1.qtag2	1/1/3:100.200

qtag1, qtag2 — The encapsulation value on the specified port ID.

Values 0 — 4094

sdp *sdp-id* — Displays the IGMP snooping statistics for a specific spoke or mesh SDP.

Values 1 — 17407

vc-id — The virtual circuit ID on the SDP ID for which to display information.

Default For mesh SDPs only, all VC IDs

Values 1 — 4294967295

pim-snooping

Syntax **pim-snooping**

Context clear>service>id

Description This command enables the context to clear PIM snooping information.

database

Syntax **database** [[**sap** *sap-id* | **sdp** *sdp-id:vc-id*] [**group** *grp-ip-address*] [**source** *src-ip-address*]]

Context clear>service>id>pim-snooping

Description This command clears PIM snooping source group database information.

Parameters **sap** *sap-id* — Clears PIM snooping SAP information.

sdp *sdp-id* — Clears PIM snooping entries associated with the specified SDP. For a spoke SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

Values 1 — 17407

group *grp-address* — Clears PIM snooping information matching the specified group address.

source *ip-address* — Clears PIM snooping information matching one particular source within the multicast group.

neighbor

Syntax **neighbor** [*ip-address* | **sap** *sap-id* | **sdp** *sdp-id:vc-id*]

Context clear>service>id>pim-snooping

Description This comand clears PIM snooping neighbor information.

Parameters *ip-address* — Clears IP address information.

sap *sap-id* — Clears PIM snooping SAP information.

sdp *sdp-id* — Clears PIM snooping entries associated with the specified SDP. For a spoke SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

Values 1 — 17407

statistics

Syntax **statistics** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*]

Context clear>service>id>pim-snooping

Description This command cloears PIM snooping statistics for the specified SAP or SDP.

Parameters **sap** *sap-id* — Clears PIM snooping SAP information.

sdp *sdp-id* — Clears PIM snooping entries associated with the specified SDP. For a spoke SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

Values 1 — 17407

Debug Commands

Debug IGMP Commands

group-interface

Syntax [**no**] **group-interface** [**fwd-service** *service-id*] [*ip-int-name*]

Context debug>router>igmp

Description This command enables debugging for IGMP group-interface.

The **no** form of the command disables debugging.

host

Syntax **host** [*ip-address*]
host [**fwd-service** *service-id*] **group-interface** *ip-int-name*
no host [*ip-address*]
no host [**fwd-service** *service-id*] **group-interface** *ip-int-name*

Context debug>router>igmp

Description This command enables debugging for the IGMP host.

The **no** form of the command disables debugging.

interface

Syntax [**no**] **interface** [*ip-int-name* | *ip-address*]

Context debug>router>igmp

Description This command enables debugging for IGMP interfaces.

The **no** form of the command disables the IGMP interface debugging for the specifies interface name or IP address.

Parameters *ip-int-name* — Only displays the information associated with the specified IP interface name.

ip-address — Only displays the information associated with the specified IP address.

mcs

Syntax **mcs** [*ip-int-name*]
no mcs

Context debug>router>igmp

Description This command enables debugging for IGMP multicast servers (MCS).

The **no** form of the command disables the IGMP interface debugging for the specifies interface name.

Parameters *ip-int-name* — Only displays the information associated with the specified IP interface name.

misc

Syntax [**no**] **misc**

Context debug>router>igmp

Description This command enables debugging for IGMP miscellaneous.

The **no** form of the command disables the debugging.

Sample Output

```
A:ALA-CA# debug router 100 igmp misc
*A:ALA-CA# show debug
debug
    router "100"
        igmp
            misc
        exit
    exit
exit
*A:ALA-CA#
```

packet

Syntax **packet** [**query**|**v1-report**|**v2-report**|**v3-report**|**v2-leave**] **host** *ip-address*
packet [**query**|**v1-report**|**v2-report**|**v3-report**|**v2-leave**] [*ip-int-name*|*ip-address*]
no packet [**query**|**v1-report**|**v2-report**|**v3-report**|**v2-leave**] [*ip-int-name*|*ip-address*]
no packet [**query**|**v1-report**|**v2-report**|**v3-report**|**v2-leave**] **host** *ip-address*

Context debug>router>igmp

Description This command enables/disables debugging for IGMP packets.

Parameters **query —** Specifies to log the IGMP group- and source-specific queries transmitted and received on this interface.

v1-report — Specifies to log IGMP V1 reports transmitted and received on this interface.

v2-report — Specifies to log IGMP V2 reports transmitted and received on this interface.

v3-report — Specifies to log IGMP V3 reports transmitted and received on this interface.

v2-leave — Specifies to log the IGMP Leaves transmitted and received on this interface.

ip-int-name — Only displays the information associated with the specified IP interface name.

ip-address — Only displays the information associated with the specified IP address.

Debug PIM Commands

adjacency

Syntax [**no**] **adjacency**

Context debug>router>pim

Description This command enables/disables debugging for PIM adjacencies.

all

Syntax **all** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no all

Context debug>router>pim

Description This command enables/disables debugging for all the PIM modules.

Parameters **group** *grp-ip-address* — Debugs information associated with all PIM modules.

Values IPv4 or IPv6 address

source *ip-address* — Debugs information associated with all PIM modules.

Values IPv4 or IPv6 address

detail — Debugs detailed information on all PIM modules.

assert

Syntax **assert** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no assert

Context debug>router>pim

Description This command enables/disables debugging for PIM assert mechanism.

Parameters **group** *grp-ip-address* — Debugs information associated with the PIM assert mechanism.

Values multicast group address (ipv4/ipv6)

source *ip-address* — Debugs information associated with the PIM assert mechanism.

Values source address (ipv4/ipv6)

detail — Debugs detailed information on the PIM assert mechanism.

bsr

Syntax **bsr** [**detail**]
no bsr

Context debug>router>pim

Description This command enables debugging for PIM Bootstrap mechanism.

The **no** form of the command disables debugging.

Parameters **detail —** Debugs detailed information on the PIM assert mechanism.

data

Syntax **data** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no data

Context debug>router>pim

Description This command enables/disables debugging for PIM data exception.

Parameters **group** *grp-ip-address* **—** Debugs information associated with the specified data exception.

Values multicast group address (ipv4/ipv6)

source *ip-address* **—** Debugs information associated with the specified data exception.

Values source address (ipv4/ipv6)

detail — Debugs detailed IP data exception information.

db

Syntax **db** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no db

Context debug>router>pim

Description This command enables/disables debugging for PIM database.

Parameters **group** *grp-ip-address* **—** Debugs information associated with the specified database.

Values multicast group address (ipv4/ipv6) or zero

source *ip-address* **—** Debugs information associated with the specified database.

Values source address (ipv4/ipv6)

detail — Debugs detailed IP database information.

interface

Syntax **interface** [*ip-int-name* | *mt-int-name* | *ip-address*] [**detail**]
no interface

Context debug>router>pim

Description This command enables/disables debugging for PIM interface.

Parameters *ip-int-name* — Debugs the information associated with the specified IP interface name.

Values IPv4 or IPv6 interface address

mt-int-address — Debugs the information associated with the specified VPRN ID and group address.

ip-address — Debugs the information associated with the specified IP address.

detail — Debugs detailed IP interface information.

jp

Syntax **jp** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no jp

Context debug>router>pim

Description This command enables/disables debugging for PIM Join-Prune mechanism.

Parameters **group** *grp-ip-address* **—** Debugs information associated with the specified Join-Prune mechanism.

Values multicast group address (ipv4/ipv6) or zero

source *ip-address* **—** Debugs information associated with the specified Join-Prune mechanism.

Values source address (ipv4/ipv6)

detail — Debugs detailed Join-Prune mechanism information.

mrib

Syntax **mrib** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no mrib

Context debug>router>pim

Description This command enables/disables debugging for PIM MRIB.

Parameters **group** *grp-ip-address* **—** Debugs information associated with the specified PIM MRIB.

Values multicast group address (ipv4/ipv6)

source *ip-address* **—** Debugs information associated with the specified PIM MRIB.

Values source address (ipv4/ipv6)

detail — Debugs detailed MRIB information.

msg

Syntax **msg** [**detail**]
no msg

Context debug>router>pim

Description This command enables/disables debugging for PIM messaging.

Parameters **detail —** Debugs detailed messaging information.

packet

Syntax **packet** [**hello** | **register** | **register-stop** | **jp** | **bsr** | **assert** | **crp**] [*ip-int-name* | *ip-address*]
no packet

Context debug>router>pim

Description This command enables/disables debugging for PIM packets.

Parameters **hello** | **register** | **register-stop** | **jp** | **bsr** | **assert** | **crp** — PIM packet types.

ip-int-name — Debugs the information associated with the specified IP interface name.

Values IPv4 or IPv6 interface address

ip-address — Debugs the information associated with the specified IP address of a particular packet type.

register

Syntax **register** [**group** *grp-ip-address*] [**source** *ip-address*] [**detail**]
no register

Context debug>router>pim

Description This command enables/disables debugging for PIM Register mechanism.

Parameters **group** *grp-ip-address* **—** Debugs information associated with the specified PIM register.

Values multicast group address (ipv4/ipv6)

source *ip-address* **—** Debugs information associated with the specified PIM register.

Values source address (ipv4/ipv6)

detail — Debugs detailed register information.

rtm

Syntax **rtm** [**detail**]
no rtm

Context debug>router>pim

Description This command enables/disables debugging for PIM RTM.

Parameters **detail —** Debugs detailed RTM information.

s-pmsi

Syntax **s-pmsi** [{*vpnSrcAddr* [*vpnGrpAddr*]} [*mdSrcAddr*]] [**detail**]
no s-pmsi

Context debug>router>pim

Description This command enables debugging for PIM selective provider multicast service interface.

The **no** form of the command disables the debugging.

Parameters *vpnSrcAddr* — Specifies the VPN source address.

vpnGrpAddr — Specifies the VPN group address

mdSrcAddr — Specifies the source address of the multicast sender.

detail — Displays detailed information for selective PMSI.

msdp

Syntax [**no**] **msdp**

Context debug>router

Description This command enables debugging for Multicast Source Discovery Protocol (MSDP).

The **no** form of the command disables MSDP debugging.

packet

Syntax **packet** [*pkt-type*] [**peer** *ip-address*]

Context debug>router>msdp

Description This command enables debugging for Multicast Source Discovery Protocol (MSDP) packets.

The **no** form of the command disables MSDP packet debugging.

Parameters *pkt-type* — Debugs information associated with the specified packet type.

Values keep-alive, source-active, sa-request, sa-response

peer *ip-address* — Debugs information associated with the specified peer IP address.

pim

Syntax **pim** [*grp-address*]
no pim

Context debug>router>msdp

Description This command enables debugging for Multicast Source Discovery Protocol (MSDP) PIM.

The **no** form of the command disables MSDP PIM debugging.

Parameters *grp-address* — Debugs the IP multicast group address for which this entry contains information.

rtm

Syntax **rtm** [*rp-address*]
no rtm

Context debug>router>msdp

Description This command enables debugging for Multicast Source Discovery Protocol (MSDP) route table manager (RTM).

The **no** form of the command disables MSDP RTM debugging.

Parameters *rp-address* — Debugs the IP multicast address for which this entry contains information.

sa-db

Syntax **sa-db** [**group** *grpAddr*] [**source** *srcAddr*] [**rp** *rpAddr*]
no sadb

Context debug>router>msdp

Description This command enables debugging for Multicast Source Discovery Protocol (MSDP) source-active requests.

The **no** form of the command disables the MSDP source-active database debugging.

Parameters **group** *grpAddr* **—** Debugs the IP address of the group.

source *srcAddr* **—** Debugs the source IP address.

rp *rpAddr* **—** Debugs the specified rendezvous point RP address.