Multicast Configuration Commands

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1 IPv4 Multicast Routing Commands

1.1 clear ip mroute

Use this command to remove the forwarding information of the IP multicast routes.

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

Parameter Description

Parameter	Description
*	Removes all the forwarding information in the IP multicast route table.
vrf *vrf-name*	Specifies the VRF instance.
group-address	Group IP address of IP multicast routes
source-address	Source IP address of multicast routes

Command Mode Privileged EXEC mode

Configuration Examples The following example removes the entry whose group IP address is 230.0.0.1 from the multicast routing table:

```
Orion_B54Q# clear ip mroute 230.0.0.1
```

Related Commands

Command	Description
show ip mroute	Displays the forwarding information of multicast routes.

Platform Description N/A

1.2 clear ip mroute statistics

Use this command to remove the statistics of IP multicast routes.

clear ip mroute [**vrf** *vrf-name*] **statistics** {* | *group-address* [*source -address*]}

Parameter Description

Parameter	Description
*	Removes all the forwarding entries in the multicast route table.
group-address	Group IP address of IP multicast routes
vrf *vrf-name*	Specifies the VRF instance.
source-address	Source IP address of multicast route

Command Mode Privileged EXEC mode

Usage Guide This command allows you to clear the statistics information of IP multicast routes.

Configuration Examples The following example clears the statistics of entry with the group IP address 230.0.0.1 from the multicast routing table.

```
Orion_B54Q# clear ip mroute statistics 230.0.0.1
```

Related Commands

Command	Description
show ip mroute	Displays the multicast route forwarding information.
clear ip mroute	Clears the multicast route forwarding information.

Platform Description N/A

1.3 ip mroute

Use this command to configure static multicast routes.
Use the **no** form of this command to delete the configured routes.
Use the **default** form of this command to restore the default setting.
ip mroute [**vrf** *vrf-name*] *source-address mask*{ **fallback-lookup** { **global** | **vrf** *vrf-name* } | [*protocol as-number*] {*rpf-addrress* | *interface-type interface-number*} [*distance*]
no ip mroute [**vrf** *vrf-name*] *source-address mask* [*protocol as-number*] {*rpf-addrress* | *interface-type interface-number*} [*distance*]
default ip mroute [**vrf** *vrf-name*] *source-address mask* [*protocol*]

Parameter Description

Parameter	Description
source-address	Source IP address of the multicast route
vrf *vrf-name*	Specifies the VRF instance.
mask	Mask of the source IP address
fallback-lookup { **global** | **vrf** *vrf-name* }	VRF used for RPF lookup
protocol	(Optional) The unicast routing protocol being used
rpf-address	Incoming interface of the multicast route
interface-type interface-number	Interface type and interface ID
distance	Management distance used to determine whether to use the route for RPF routing, ranging from 1 to 255.

Defaults The default is 0.

Command Mode Global configuration mode

Usage Guide This command is used to configure the route for the purpose of RFF check. Note that the configured route is prior to the route learned in the unicast form.

Configuration Examples The following example allows the multicast routes of all the sources in a network to pass 172.30.10.13.

```
Orion_B54Q(config)# ip mroute 172.16.0.0 255.255.0.0
172.30.10.13
```

Platform Description N/A

1.4 ip multicast-routing

Use this command to enable multicast routing forwarding.
Use the **no** form of this command to disable multicast routing forwarding.
Use the **default** form of this command to restore the default setting.
ip multicast-routing [**vrf** *vrf-name*]
no ip multicast-routing [**vrf** *vrf-name*]
default ip multicast-routing [**vrf** *vrf-name*]

Parameter Description

Parameter	Description
vrf *vrf-name*	Specifies the VRF instance.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command allows you to enable IPv4 multicast routing forwarding. The multicast protocol will not be enabled with IPv4 multicast routing forwarding disabled.

Configuration Examples This command enables multicast routing forwarding.

```
Orion_B54Q(config)# ip multicast-routing
```

Platform Description N/A

1.5 ip multicast boundary

Use this command to configure the boundary of an IP multicast group.
Use the **no** form of this command to remove the configuration.
Use the **default** form of this command to restore the default setting.
ip multicast boundary *access-list*
no ip multicast boundary *access-list*
default ip multicast boundary *access-list* [**in** | **out**]

Parameter Description	**Parameter**	**Description**
	access-list	Access list associated with the multicast boundary

Defaults The boundary of a specified IP multicast group is defined by default.

Command Mode Interface configuration mode

Usage Guide
Note that the ACL associated with the multicast boundary is either standard ACL or extended ACL. But the extended ACL only match the destination IP address.
Note:
This command filters IGMP and PIMSM packets of the specified IP address range.
Multicast packets will not be received and sent through the interface of the boundary.

Configuration Examples
The following example configures svi1 as the boundary of all IP multicast groups.

```
Orion_B54Q(config)# ip access-list mul-boun
Orion_B54Q(config-std-nacl)# permit ip 233.3.3.0 0.0.0.255
Orion_B54Q(config-std-nacl)#exit
Orion_B54Q(config)# interface vlan 1
Orion_B54Q(config-if)# ip multicast boundary mul-boun
```

1.6 ip multicast route-limit

Use this command to limit the number of the entries that can be added to the multicast routing table.
Use the **no** form of this command to remove the configuration.
Use the **default** form of this command to restore the default setting.
ip multicast [**vrf** *vrf-name*] **route-limit** *limit* [*threshold*]
no ip multicast [**vrf** *vrf-name*] **route-limit**
default ip multicast [**vrf** *vrf-name*] **route-limit**

Parameter Description

limit	The number of the entries that can be added to the multicast routing table is 1 to 2147483647.
vrf *vrf-name*	Specifies the VRF instance.
threshold	(Optional) Number of multicast routes at which alarms will be triggered.

Defaults

The default value of *limit* is 1024.
The default value of *threshold* is 2147483647.

Command Mode

Global configuration mode

Usage Guide

This command is used to restrict the number of route adding to the IPv6 multicast table. Note that the hardware resources of different devices are limited. The routes exceeding the hardware resource will be forwarded by software, which leads to lower product performance.
If you want to use the PIM protocol to create more than 128 entries in the multicast routing table, you are advised to set the CPP value of PIM packets to the number of entries in the multicast routing table. If you want to use the IGMP protocol to create more than 1000 entries in the multicast routing table, you are advised to set the CPP value of IGMP packets to the number of entries in the multicast routing table.

Configuration Examples

The following example sets the route limit to 500.

```
Orion_B54Q(config)# ip multicast route-limit 500
```

Platform Description

N/A

1.7 ip multicast rpf longest-match

Select the multicast static routing, MBGP routing and unicast routing that could be used for the RPF check from the multicast static routing table, MBGP routing table and unicast routing table respectively by following the RPF rules. Use this command to select the one with the mask longest-matched from the three routings. If the routings are in the same priority, select the routing in order of multicast static routing, MBGP routing, unicast routing.
Use the **no** or **default** form of this command to restore it to the default setting. By default, select one routing of the highest priority from the three routings. If the routings are in the same priority, select the routing in order of multicast static routing, MBGP routing, unicast routing.
ip multicast [**vrf** *vrf-name*] **rpf longest-match**
no ip multicast [**vrf** *vrf-name*] **rpf longest-match**
default ip multicast [**vrf** *vrf-name*] **rpf longest-match**

Parameter Description	**vrf** *vrf-name*	Specifies the VRF instance.

Defaults Select the multicast static routing, MBGP routing and unicast routing that are used for the RPF check from the multicast static routing table, MBGP routing table and unicast routing table respectively by following the RPF rules. Then select one routing of the highest priority from the three routings. If the routings are in the same priority, select the routing in order of multicast static routing, MBGP routing, unicast routing.

Command Mode Global configuration mode

Configuration Examples The following example configures to select the routing with the longest-match.

```
Orion_B54Q(config)# ip multicast rpf longest-match
```

Platform Description N/A

1.8 ip multicast static

Use this command to enable flow control for multicast packets on the Layer 2 interface.
Use the **no** form of this command to remove the configuration.
Use the **default** form of this command to restore the default setting.**ip multicast static** *source-address group-address interface-type interface-number*
no ip multicast static *source-address group-address interface-type interface-number*
default ip multicast static *source-address group-address interface-type interface-number*

Parameter Description

Parameter	Description
source-address	Source IP address
group-address	IP address of the multicast group
interface-type interface number	Layer 2 interface on which multicast packets are allowed to forward

Defaults This function is disabled by default

Command Mode Global configuration mode

Usage Guide	You can configure more than one command (or more than one interface) for a multicast flow. With flow control enabled, the multicast flow can only be forwarded through these This command controls the forwarding of multicast flows on an interface without any direct influence on the packet processing of multicast protocols. However, the action of a multicast protocol (for instance, PIM-DM or PIM-SM) may be affected because some features of the multicast protocol are driven by multicast flows.

Configuration Examples	The following example configures forwarding multicast flows (192.168.43.4 and 255.1.1.5) through GigabitEthernet 2/6 and FastEthernet 3/2.
	`Orion_B54Q(config)# ip multicast static 192.168.43.4 225.1.1.5 G2/6`
	`Orion_B54Q(config)# ip multicast static 192.168.43.4 225.1.1.5 F3/2`

Platform Description	N/A

1.9 ip multicast ttl-threshold

Use this command to configure TTL (time-to-live) threshold on the interface.
Use the **no** or **default** form of this command to restore the default setting.

ip multicast ttl-threshold *ttl-value*
no ip multicast ttl-threshold
default ip multicast ttl-threshold

Parameter Description

Parameter	Description
ttl-value	TTL threshold on the interface, within the range of 0 to 255.

Defaults	The default *ttl-value* is 0.
Command Mode	Interface configuration mode
Usage Guide	Use **show running-config** to display configuration. A device with multicast enabled can maintain one TTL threshold for every interface. If the TTL of the multicast packet received is greater than the threshold of the interface, the packets will be forwarded. Otherwise, the packet is discarded. Note that the TTL threshold is effective only to the multicast frames. In addition, you must configure it on the L3 interface.

Configuration `Orion_B54Q(config-if)# ip multicast ttl-threshold 5`

1.10 msf ipmc-overflow override

Use this command to enable the overflow overriding mechanism.
Use the **no** form of this command to remove the configuration.
Use the **default** form of this command to restore the default setting.
msf ipmc-overflow override
no msf ipmc-overflow override
default msf ipmc-overflow override

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples

The following example enables the overflow overriding mechanism.

```
Orion_B54Q (config)# msf ipmc-overflow override
Orion_B54Q (config)#
```

Platform Description N/A

1.11 msf nsf

Use this command to configure the parameter for the continous multicast forwarding.
Use the **no** or **default** form of this command to restore the default setting.
msf nsf { **convergence-time** *time* | **leak** *interval* }
no msf nsf {**convergence-time** | **leak**}
default msf nsf {**convergence-time** | **leak**}

Parameter Description

Parameter	Description
convergence-time *time*	Maximum time for the multicast protocol convergence, in the valid range of the 0-3600s.
leak *interval*	Packet multicast leak time, in the valid range of 0-3600s

Defaults	**convergence-time** *time* :20s **leak** interval: 30s
Command Mode	Global configuration mode
Usage Guide	N/A

Configuration Examples	The following example sets the maximum time for the protocol convergence.
	`Orion_B54Q (config)# msf nsf convergence-time 300`
	`Orion_B54Q (config)#`
	The following example sets the packets leak time:
	`Orion_B54Q(config)# msf nsf leak 200`
	`Orion_B54Q(config)#`

Platform Description	N/A

1.12 show ip mrf mfc

Use this command to display the IPv4 multicast routing forwarding table.

show ip mrf [**vrf** *vrf-name*] **mfc** [*soure-address group-address*]

Parameter Description

Parameter	Description
vrf *vrf-name*	Private nework's VRF name, if no vrf name is specified, the public network's multicast routing forwarding entries are displayed by default.
source-address	Source address of the multicast routing forwarding entries
group-address	Group address of the multicast routing forwarding entries

Defaults	All IPv4 multicast routing forwarding entries are displayed by default.
Command Mode	Global configuration mode/Interface configuration mode/Privileged EXEC mode

Usage Guide

The three parameters in this command are optional, wherein the source address and group

- If no source address and group address are specified, all mfc entries are displayed.
- When the source address and group address are specified only, the entries corresponding to the source and group addresses are displayed.

Configuration Examples

The following example shows all IPv4 layer-3 multicast routing forwarding entries with source address 20.0.1.30.

```
Orion_B54Q#show ip mrf mfc 20.0.1.30 233.3.3.3
Multicast Routing and Forwarding Cache Table
(20.0.1.30, 233.3.3.3)
 FAST_SW, SWTCHED, MIN_MTU: 1500, MIN_MTU_IFINDEX: 4099, WRONG IF: 0
 Incoming interface: VLAN 1[4097]
Outgoing interface list:
VLAN 3 (1)
```

The fields in the execution of the **show ip mrf mfc** command are described in the following table.

Field	Description
20.0.1.30	Source address of the entry.
233.3.3.3	Group address of the entry.
FAST_SW	The Flag shows whether to allow the fast forwarding or not. If the non-Ethernet interface, ppp, hdlc and frame relay exist, no fast forwarding entry generates.
SWTCHED	Indicate whether the entry configuration on the next layer forwarding table has done not not.
MIN_MTU MTU	The minimum MTU of the entry.
MIN_MTU_IFINDEX	The interface index with the minimum MTU value.
WRONG IF	The statistics number of the multicast data packets received on the wrong incoming interface.
Incoming interface	Incoming interface of the entry.
VLAN 3 (1)	The layer-3 outgoing interface of the entry is VLAN3. 1 for the ttl threshold of this layer-3 interface.

Platform Description N/A

1.13 show ip mroute

Use this command to display the multicast forwarding table.

show ip mroute [**vrf** *vrf-name*] [*group-or-source-address* [*group-or-source-address*]] [**dense** | **sparse**] [**summary** | **count**]

Parameter Description

Parameter	Description
group-address	Multicast group IP address

vrf v*rf-name*	Specifies the VRF instance.
group-or-source-address	Multicast or source IP address
group-or-source-address	Multicast or source IP address. The two addresses must not be the multicast addresses or source addresses at the same time.
dense	Displays PIM-DM multicast routing table.
sparse	Displays PIM-SM multicast routing table.
summary	Displays the summary of the multicast routing table.
count	Displays the count of the multicast routing table.

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Configuration Examples The following example displays the information of the multicast routing table:

```
Orion_B54Q# show ip mroute
IP Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder
installed
Timers: Uptime/Stat Expiry
Interface State: Interface (TTL)
(10.10.1.52, 224.0.1.3), uptime 00:00:31, stat expires 00:02:59
Owner PIM-SM, Flags: TF
Incoming interface: FastEthernet 2/1
Outgoing interface list:
FastEthernet 1/3
```

The following example displays the information of a specific entry:

```
Orion_B54Q# show ip mroute 10.10.1.52 224.0.1.3
IP Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder
installed
Timers: Uptime/Stat Expiry
Interface State: Interface (TTL)
(10.10.1.52, 224.0.1.3), uptime 00:03:24, stat expires 00:01:28
Owner PIM-SM, Flags: TF
Incoming interface: FastEthernet 2/1
Outgoing interface list:
FastEthernet 1/3
```

The following example displays the count of the routing table:

```
Orion_B54Q# show ip mroute count
IP Multicast Statistics
Total 1 routes using 132 bytes memory
Route limit/Route threshold: 2147483647/2147483647
Total NOCACHE/WRONGVIF/WHOLEPKT recv from fwd: 1/0/0
Total NOCACHE/WRONGVIF/WHOLEPKT sent to clients: 1/0/0
Immediate/Timed stat updates sent to clients: 0/0
Reg ACK recv/Reg NACK recv/Reg pkt sent: 0/0/0
Next stats poll: 00:01:10
Forwarding Counts: Pkt count/Byte count, Other Counts: Wrong If
pkts
Fwd msg counts: WRONGVIF/WHOLEPKT recv
Client msg counts: WRONGVIF/WHOLEPKT/Imm Stat/Timed Stat sent
Reg pkt counts: Reg ACK recv/Reg NACK recv/Reg pkt sent
(10.10.1.52, 224.0.1.3), Forwarding: 2/19456, Other: 0
Fwd msg: 0/0, Client msg: 0/0/0/0, Reg: 0/0/0
```

The following example displays the summary of the routing table:

```
Orion_B54Q# show ip mroute summary
IP Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder
installed
Timers: Uptime/Stat Expiry
Interface State: Interface (TTL)
(10.10.1.52, 224.0.1.3), 00:01:32/00:03:20, PIM-SM, Flags: T
```

Field	Description
Flags	I-Immediate statistic T-Timed statistic F-Already set to the forwarding table
Timers:Uptime/Stat Expiry	Time when the entry is created. Time when it is aged.
Interface State	Interface state.
Owner	Owner of the entry, which may be a multicast routing protocol
Incoming interface	Expected packet incoming interface. If the actual incoming interface does not match it, the packets will be discarded.
Outgoing interface list	Outgoing interface list; the packets will be forwarded on the interfaces in the list.
Forwarding Counts: Pkt count/Byte count,	Forwarding count: packet count/byte count forwarded by the entry

Other Counts: Wrong If pkts	Count of the packets received from the wrong incoming interface.

Related Commands

Command	Description
ip multicast-routing	Enables the multicast routing forwarding.
ip pim dense-mode	Enables the PIM-DM on the interface.
ip pim sparse-mode	Enables the PIM-SM on the interface.

Platform Description N/A

1.14 show ip mroute static

Use this command to display the IPv4 static multicast routing information.

show ip mroute [**vrf** *vrf-name*] **static**

Parameter Description

Parameter	Description
vrf *vrf-name*	Specifies the VRF instance.

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Usage Guide Use this command to show the user-configured static multicast routing. In the same conditions, the priority of the static multicast routing is higher than the dynamically learned.

Configuration Examples

The following example displays the information of the user-configured static multicast routing:

```
Orion_B54Q#show ip mroute static
Mroute: 172.16.0.0, RPF neighbor: 172.30.10.13
 Protocol: , distance: 0
```

The following example displays the information of the user-configured static multicast routing (including VRF information):

```
Orion_B54Q# show ip mroute static
Mroute: 172.16.0.0, VRF: vpn1, distance: 0
```

Platform Description N/A

1.15 show ip mvif

Use this command to show the basic information of the multicast interface.

show ip mvif [**vrf** *vrf-name*] { *interface-type interface-number* }

Parameter Description

Parameter	Description
interface-type interface-number	Interface Type and number
vrf *vrf-name*	Specifies the VRF instance.

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Configuration Examples

The following example shows the basic information of the multicast interface of svil.

```
Orion_B54Q#show ip mvif vlan 1
Interface Vif Owner TTL Local Remote Uptime
 Idx Module Address Address
VLAN 1 1 PIM-DM 2 192.168.1.1 0.0.0.0 00:13:16
```

Platform Description N/A

1.16 show ip rpf

Use this command to display the RPF information of the specified source IP address.

show ip rpf [**vrf** *vrf-name*] {*source-address* [*group-address*] [**rd** *route-distinguisher*]} [**metric**]

Parameter Description

Parameter	Description
source-address	Specified source IP address
group-address	Specified source IP address
rd *route-disting unisher*	Uses the RD provy for the searching.
metric	Displays the metric of the MDT-SAFI route.
vrf vrf-name	Specifies the VRF instance.

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Configuration Examples

The following example displays the information of the RPF to 192.168.1.54:

```
Orion_B54Q# show ip rpf 192.168.1.54
RPF information for 192.168.1.54
RPF interface: VLAN 1
RPF neighbor: 0.0.0.0
```

```
RPF route: 192.168.1.0/24
RPF type: unicast (connected)
RPF recursion count: 0
Doing distance-preferred lookups across tables
Distance: 0
Metric: 0 RPF information for 192.168.1.54
RPF interface: VLAN 1
RPF neighbor: 0.0.0.0
RPF route: 192.168.1.0/24
RPF type: unicast (connected)
RPF recursion count: 0
Doing distance-preferred lookups across tables
Distance: 0
Metric: 0
```

Platform Description N/A

1.17 show msf msc

Use this command to display IPv4 multi-layer multicast forwarding table.

show msf msc [*soure-address*] [*group-address*] [*vlan-id*]

Parameter Description

Parameter	Description
source-address	Specified source IP address of the multi-layer multicast forwarding table.
group-address	Specified group address of the multi-layer multicast forwarding table.
vlan-id	The VLAN ID where the incoming interface of the multi-layer multicast forwarding table is. 4096 indicates a routed port.

Defaults All IPv4 multi-layer multicast forwarding entries are displayed by default.

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Usage Guide

If no source address and group address are specified, all mfc entries are displayed.

- If only the source address is specified as s1, all msc entries with source address 1 are displayed.
- If the source address is specified as s1 and the group address as g1, all corresponding msc entries are displayed.
- If the source address is specified as s1, the group address as g1 and the vlan id as v1, all corresponding msc entries are displayed.
- Each parameter shall be input in order. Only when the parameter in front has been configured, the following one could be set.

Configuration Examples

The following example displays the IPv4 layer-3 multicast forwarding entries with source IP address 192.168.195.25:

```
Orion_B54Q# show msf msc 192.168.195.25
Multicast Switching Cache Table
(192.168.195.23, 233.3.3.3, 1), SYNC, MTU:0, 1 OIFs
VLAN 1(0): 1 OPORTs, REQ: DONE
OPORT 6, IGMP-SNP, REQ: DONE
```

The fields in the execution of the **show mrf mfc** command are described in the following table.

Field	Description
192.168.195.23	Source address of the entry.
233.3.3.3	Group address of the entry.
1	Vlan id where the incoming interface of the entry is.
SYNC	The entry has been synchronized to the hardware.
MTU	MTU value
OIFs	Layer-3 outgoing interface number.
VLAN1(0)	The vlan where the layer-3 outgoing interface oif is.
1 OPORTs	The number of layer-2 port in the layer-3 outgoing oif.
REQ: DONE	This oif configuration on the hardware has done.
OPORT 6	The layer-2 port in the oif with index 6.
IGMP-SNP	This port is created by the IGMP SNOOPING protocol. This value can also be the PIM-SNP, which means this port is created by the PIM SNOOPING protocol. And the ROUTER means this port is created by the layer-3 protocol.
REQ: DONE	The port configuration on the hardware has done.

Platform Description

N/A

1.18 show msf nsf

Use this command to display the configuration of continuous multicast forwarding.

show msf nsf

Parameter Description

Parameter	Description
N/A	N/A

Command Mode Global configuration mode/Interface configuration mode/Privileged EXEC mode

Configuration Examples

The following example displays the configuration of continuous multicast forwarding.

```
Orion_B54Q# show msf nsf
Multicast HA Parameters
------------------------------------------------------+------+
protocol convergence timeout 120 secs
flow leak interval 20 secs
Orion_B54Q#
```

Related Commands

Command	Description
msf nsf	Configures the multicast NSF parameter.

Platform Description N/A

2 IPv6 Multicast Routing Commands

2.1 clear ipv6 mroute

Use this command to remove the specific or all IPv6 multicast forwarding entries.

clear ipv6 mroute { ***** | *v6group-address* [*v6source -address*]}

Parameter Description

Parameter	Description
*	Removes all the forwarding information in the IPv6 multicast route table.
v6group-address	Group IPv6 address of IPv6 multicast routes.
v6source-address	Source IPv6 address of multicast routess.

Command Mode Privileged EXEC mode

Configuration Examples The following example removes all the multicast routing entries.

```
Orion_B54Q# clear ip mroute *
```

Related Commands

Command	Description
show ipv6 mroute	N/A
clear ipv6 mroute statistics	N/A

2.2 clear ipv6 mroute statistics

Use this command to remove the statistics of IPv6 multicast routes.

clear ipv6 mroute statistics {***** | *v6group-address* [*v6source -address*]}

Parameter Description

Parameter	Description
*	Removes all the forwarding entries in the multicast route table.
v6group-address	Group IPv6 address of IPv6 multicast routes
v6source-address	Source IPv6 address of multicast route

Command Mode Privileged EXEC mode

Usage Guide This command allows you to clear the statistics information of IPv6 multicast routes.

Configuration Examples

The following example clears all the statistical information of the multicast routing entries.

```
Orion_B54Q# clear ip mroute statistics *
```

Related Commands

Command	Description
show ipv6 mroute	Displays the multicast route forwarding information.
clear ipv6 mroute	Clears the multicast route forwarding information.

2.3 ipv6 mroute

Use this command to configure static IPv6 multicast routes. Use the **no** form of this command to restore the default setting.

ipv6 mroute *ipv6-prefix/prefix-length* [*protocol as-number*] {*v6rpf-addrress* | *interface-type interface-number*} [*distance*]

no ipv6 mroute *ipv6-prefix/prefix-length* [*protocol as-number*] { *v6rpf-addrress* | *interface-type interface-number*} [*distance*]

Parameter Description

Parameter	Description
ipv6-prefix/prefix-length	Source IPv6 address of the multicast route.
mask	Mask of the source IPv6 address.
protocol	(Optional) The unicast routing protocol being used.
v6rpf-address	Incoming interface of the multicast route
interface-type interface-number	Interface type and interface ID.
distance	Management distance used to determine whether to use the route for RPF routing, ranging from 1 to 255. The default value is 0.

Defaults

The static IPv6 multicast routing is not configured by default.

Command Mode

Global configuration mode.

Usage Guide

This command is used to configure the route for the purpose of RFF check. Note that the configured route is prior to the route learned in the unicast form.

If the outgoing direction of static multicast route but not the next-hop IP shall be specified, the outgoing direction must be of the point-to-point type.

The RPF rule is that when a best multicast route from the multicast list is selected, if the BGP multicast route and the static multicast route coexist, the latter one takes the precedence; select a best unicast route from the unicast list and compare the mask length of the best multicast and unicast routes, the one with greater mask length becomes the RPF route; if both mask length are the same, you shall compare the distance, and the one with smaller distance becomes the RPF route; if both distance values are the same, the multicast route becomes the RPF route.

Configuration Examples The following example allows the static multicast route 2233::/64 to pass 3333::3333:

```
Orion_B54Q(config)# ipv6 mroute 2233::/64 3333::3333
```

2.4 ipv6 multicast boundary

Use this command to configure the boundary of an IPv6 multicast group. Use the **no** form of this command to restore the default setting.

ipv6 multicast boundary *access-list-name*

no ipv6 multicast boundary *access-list-name*

Parameter Description

Parameter	Description
access-list-name	Access list associated with the multicast boundary.

Defaults The boundary of a specified IPv6 multicast group is not defined by default.

Command Mode Interface configuration mode

Usage Guide

Note that the ACL associated with the multicast boundary is either standard ACL or extended ACL. But the extended ACL only match the destination IPv6 address.

⚠ This command filters MLD, PIM-SMv6 packets of the specified IPv6 address range. Multicast packets will not be received and sent through the interface of the boundary.

Configuration Examples

The following example configures svi1 as the boundary of all IPv6 multicast groups.

```
Orion_B54Q(config)# ip access-list mul-boun
Orion_B54Q(config-std-nacl)# permit ip 233.3.3.0 0.0.0.255
Orion_B54Q(config-std-nacl)#exit
Orion_B54Q(config)# interface vlan 1
Orion_B54Q(config-if)# ip multicast boundary mul-boun
```

2.5 ipv6 multicast route-limit

Use this command to limit the number of the entries that can be added to the IPv6 multicast routing table.

Use the **no** form of this command to restore the default setting.

ipv6 multicast route-limit *limit* [*threshold*]

no ipv6 multicast route-limit *limit* [*threshold*]

Parameter	Description

Parameter Description		
	limit	The number of the entries that can be added to the IPv6 multicast routing table is 1 to 65,536.
	threshold	(Optional) Number of IPv6 multicast routes at which alarms will be triggered.

Defaults

The default value of *limit* is 1,024.
The default value of *threshold* is 65,536.

Command Mode

Global configuration mode

Usage Guide

This command is used to restrict the number of route adding to the IPv6 multicast table.

⚠ The hardware resources of different devices are limited. The routes exceeding the hardware resource will be forwarded by software, which leads to lower product performance.

Packets that exceed this value will be discarded.. If you want to use the PIM protocol to create more than 128 entries in the multicast routing table, you are advised to set the CPP value of PIM packets to the number of entries in the multicast routing table. If you want to use the IGMP protocol to create more than 1000 entries in the multicast routing table, you are advised to set the CPP value of IGMP packets to the number of entries in the multicast routing table.

Configuration Examples

The following example sets the route limit to 500 and the warning value 90.

```
Orion_B54Q(config)# ipv6 multicast route-limit 500 90
```

2.6 ipv6 multicast-routing

Use this command to enable the IPv6 multicast routing forwarding.
Use the **no** form of this command to restore the default setting.
ipv6 multicast-routing
no ipv6 multicast-routing

Parameter Description	Parameter	Description
	N/A	N/A

Defaults

This function is disabled by default

Command Mode

Global configuration mode

Usage Guide

Use this command to enable the IPv6 multicast routing forwarding. With this function disabled,

⚠ This command must be configured to enable the IPv6 multicast routing forwarding. This function conflicts with IGMP Snooping.

Configuration Examples

The following example enables the IPv6 multicast routing forwarding.

```
Orion_B54Q(config)# ipv6 multicast-routing
```

2.7 ipv6 multicast rpf longest-match

Use the RPF rule to select the static multicast route, MBGP route and the unicast route for the purpose of RPF check from the static multicast route list, the MBGP route list and the unicast route list.
Use this command to select one route with the longest-matched mask from the above-mentioned three routes. If the priority values of all three routes are the same, the routes will be selected in order of static multicast route, MBGP route and unicast route.
Use the **no** form of this command to restore the default setting.
ipv6 multicast rpf longest-match
no ipv6 multicast rpf longest-match

Parameter Description

Parameter	Description
N/A	N/A

Defaults

Use the RPF rule to select the static multicast route, MBGP route and the unicast route for the purpose of RPF check from the static multicast route list, the MBGP route list and the unicast route list.
Use this command to select one route, which is prior to the other two routes, with the longest-matched mask from the above-mentioned three routes. If the priority values of all three routes are the same, the routes will be selected in order of static multicast route, MBGP route and unicast route.

Command Mode

Global configuration mode

Usage Guide

N/A.

Configuration Examples

The following example selects one route with the longest-matched mask from the above-mentioned three routes.

```
Orion_B54Q(config)# ipv6 multicast rpf longest-match
```

2.8 ipv6 multicast static

Use this command to enable flow control for multicast packets on the Layer 2 interface. Use the **no** form of this command to restore the default setting.

ipv6 multicast static *source-address group-address interface-type interface-number*

no ipv6 multicast static *source-address group-address interface-type interface-number*

Parameter Description

Parameter	Description
source-address	Source IPv6 address
group-address	IPv6 address of the multicast group
interface-type interface number	Layer 2 interface on which multicast packets are allowed to forward

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide You can configure more than one command (or more than one interface) for a multicast flow. With flow control enabled, the multicast flow can only be forwarded through these configured interfaces.

This command controls the forwarding of multicast flows on an interface without any direct influence on the packet processing of multicast protocols. However, the action of a multicast protocol (for instance, PIM-SMv6) may be affected because some features of the multicast protocol are driven by multicast flows.

Configuration Examples The following example configures forwarding multicast flows (2222::3333, ff66::100) through GigabitEthernet 2/6 and FastEthernet 3/2.

```
Orion_B54Q(config)# ipv6 multicast static 2222::3333 ff66::100 G2/6
Orion_B54Q(config)# ipv6 multicast static 2222::3333 ff66::100 F3/2
```

2.9 msf6 nsf

Use this command to configure parameters for multicast non-stop forwarding.

Use the **no** form of this command to restore the default setting.

msf6 nsf { **convergence-time** *time* | **leak** *interval* }

no msf6 nsf { **convergence-time** | **leak** }

Parameter

Parameter	Description

Description	**convergence-time** *time*	Maximum duration for which the system waits for multicast protocol convergence. The unit is second. The value ranges from 0 to 3600.
	leak *interval*	Interval at which multicast packets are leaked. The unit is second. The value ranges from 0 to 3600.

Defaults The default convergence-time is 20 and leak interval is 30.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example sets the maximum duration for which the system waits for multicast protocol convergence:

```
Orion_B54Q (config)# msf6 nsf convergence-time 300
```

The following example sets the interval at which multicast packets are leaked.

```
Orion_B54Q(config)# msf6 nsf leak 200
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.10 show ipv6 mroute

Use this command to display the IPv6 multicast forwarding table.

show ipv6 mroute [*group-or-source-address* [*group-or-source-address*]] [**dense** | **sparse**] [**summary** | **count**]

Parameter Description

Parameter	Description
v6group-address	Multicat group IPv6 address
v6source-address	Multicast source IPv6 address
summary	Displays the summary of the multicast routing table.
count	Displays the count of the multicast routing table.

Command Mode Privileged EXEC mode

```
Orion_B54Q# show ipv6 mroute
IPv6 Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder installed
Timers: Uptime/Stat Expiry
Interface State: Interface (TTL)
(2222::1234, ff56::1234), uptime 00:00:31, stat expires 00:02:59
Owner PIM-SMv6, Flags: TF
Incoming interface: FastEthernet 2/1
Outgoing interface list:
FastEthernet 1/3
```

Configuration Examples

The following example displays the count of the routing table:

```
Orion_B54Q# show ipv6 mroute count
IPv6 Multicast Statistics
Total 1 routes using 168 bytes memory
Route limit/Route threshold: 1024/2147483647
Total NOCACHE/WRONGVIF/WHOLEPKT recv from fwd: 77/147/0
Total NOCACHE/WRONGVIF/WHOLEPKT sent to clients: 77/147/0
Immediate/Timed stat updates sent to clients: 0/29
Reg ACK recv/Reg NACK recv/Reg pkt sent: 0/0/0
Next stats poll: 00:00:09
Forwarding Counts: Pkt count/Byte count, Other Counts: Wrong If pkts
Fwd msg counts: WRONGVIF/WHOLEPKT recv
Client msg counts: WRONGVIF/WHOLEPKT/Imm Stat/Timed Stat sent
Reg pkt counts: Reg ACK recv/Reg NACK recv/Reg pkt sent
(2222::1234, ff56::1234), Forwarding: 1/0, Other: 0
 Fwd msg: 0/0, Client msg: 0/0/0/0, Reg: 0/0/0
```

The following example displays the summary of the routing table:

```
Orion_B54Q# show ipv6 mroute summary
IPv6 Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder installed
Timers: Uptime/Stat Expiry
Interface State: Interface (TTL)
(2222::1234, ff56::1234), 00:00:28/00:03:25, PIM-SMv6, Flags: TF
```

2.11 show ipv6 mroute static

Use this command to display the static IPv6 multicast routing information.

show ipv6 mroute static

Parameter Description	*N/A*	N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to display the statically-configured multicast route. Under the same condition, the static multicast route is prior to the unicast route.

Configuration Examples The following example displays the static IPv6 multicast routing information.

```
Orion_B54Q#show ipv6 mroute static
Mroute: 2233::/64, RPF neighbor: 3333::3333
Protocol: , distance: 0
```

2.12 show ipv6 mvif

Use this command to display the basic information of the multicast interface.

show ipv6 mvif { *interface-type interface-number* }

Parameter Description	**Parameter**	**Description**
	interface-type interface-number	Interface Type and number

Command Mode Privileged EXEC mode

Configuration Examples The following example displays the basic information of the multicast interface of svil.

```
Orion_B54Q#show ipv6 mvif
Interface    Mif Owner    Uptime
       Idx Module
Register     0      03d03h09m
VLAN 1     1  PIMSMV6   03d03h09m
```

2.13 show ipv6 rpf

Use this command to display the RPF information of the specified source IPv6 address.

show ipv6 rpf {*v6source-address*}

Parameter Description	**Parameter**	**Description**
	v6source-address	Specified source IPv6 address

Command Privileged EXEC mode

Configuration Examples

The following example displays the information of the RPF to 2222::3333:

```
Orion_B54Q# show ipv6 rpf 2222::3333
 RPF interface: GigabitEthernet 0/1
 RPF neighbor: ::
 RPF route: 2222::/64
 RPF type: unicast (connected)
 RPF recursion count: 0
 Doing distance-preferred lookups across tables
 Distance: 0
 Metric: 0
```

2.14 show ipv6 mrf6 mfc

Use this command to display the IPv6 multicast forwarding table.

show ipv6 mrf6 mfc [*v6soure-address v6group-address*]

Parameter Description

Parameter	Description
v6group-address	IPv6 address of a multicast group.
v6source-address	IPv6 address of a multicast source.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to display the entries of the multicast data stream forwarding table. The forwarding table displayed in the command output is basically consistent with the multicast routing forwarding table displayed in the command output of **show ipv6 mroute**. The difference is that in the multicast data stream forwarding table, the protocols based on which entries are generated are not recorded.

The two parameters are optional. The source address and group address must be specified together.

If the two parameters are not specified, all mrf table entries will be displayed.

If the two parameters are specified, the mrf entries of the specified source address and group address are displayed.

Configuration Examples The following example displays the layer-3 multicast forwarding table entries of IPv6 (the source address is 2000::1 and the group address is FF55::1).

```
Orion_B54Q#show ipv6 mrf6 mfc 2000::1 FF55::1
Multicast Routing and Forwarding Cache6 Table
(2000::1, FF55::1)
```

```
FAST_SW, SWTCHED, MIN_MTU: 1500, MIN_MTU_IFINDEX: 4099, WRONG IF: 0
Incoming interface: VLAN 1[4097]
Outgoing interface list:
VLAN 3 (1)
```

Field	Description
2000::1	Source address of entries.
FF55::1	Group address of entries.
FAST_SW	Indicates whether the entries allow fast forwarding, that is, whether the entries can be forwarded by using hardware or software forwarding. If the entries include an interface that does not support the multicast function (for example, the GRE tunnel interface), fast forwarding is not allowed.
SWTCHED	Indicates whether the entries have been placed in the forwarding table on the next layer.
MIN_MTU MTU	Minimum MTU value of entries.
MIN_MTU_IFINDEX	Index of the interface that has the minimum MTU value.
WRONG IF	Number of multicast packets sent from the wrong inbound interface.
VLAN 1[4097]	Indicates that the rpf inbound interface is VLAN1. 4097 indicates the IFINDEX of the interface.
VLAN 3 (1)	Indicates that the layer-3 outbound interface of the entries is VLAN 3. 1 indicates the ttl threshold of the layer-3 interface.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.15 show msf6 msc

Use this command to display entries of the IPv6 routing multicast data stream exchange table.

show msf6 msc [*v6soure-address*] [*v6group-address*] [*vlan-id*]

Parameter Description

Parameter	Description
v6group-address	IPv6 address of a multicast group.
v6source-address	IPv6 address of a multicast source.
vlan-id	VLAN ID of the inbound interface of the entries. If the value is greater than 4096, the interface is a routing interface.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to display entries of the IPv6 routing multicast data stream exchange table. The three parameters are all optional.
If only the source address is specified and set to s1, msc entries of this source address will be displayed.
If the source address is set to s1 and the group address is set to g1, msc entries of this source address and group address will be displayed.
If the source address is set to s1, the group address is set to g1, and the VLAN ID is set to v1, then msc entries that meet these three conditions will be displayed.
You must specify these three parameters in sequence. That is, you must specify the current parameter before specifying the next.

Configuration Examples The following example displays entries of the IPv6 routing multicast data exchange table of source address 2000::1:

```
Orion_B54Q# show msf6 msc 2000::1
Multicast Switching Cache Table
(2000::1, FF55::1, 1), SYNC, MTU:0, 1 OIFs
 VLAN 4094(8190): 1 OPORTs, REQ: DONE
OPORT 6, MLD-SNP, REQ: DONE
```

Field	Description
2000::1	Source address of entries.
FF55::1	Group address of entries.
1	VLAN ID of the inbound interface of the entries.
SYNC	Indicates that the entries have been synchronized to the bottom-layer hardware.
MTU	MTU value of the entries.
OIFs	Number of layer-3 interfaces of the entries.
VLAN 4094(8190)	Indicates a layer-3 outbound interface VLAN xxx (yyy). If the layer-3 interface is an SVI interface, the value of xxx is the VLAN vid of the SVI, and the value of yyy is the VLAN vid+4096. If the layer-3 interface is a routing interface, the value of xxx is the IFINDEX of the interface+4096, and the value of yyy is the IFINDEX. This facilitates the index management of all layer-3 interfaces.
1 OPORTs	Number of layer-2 interfaces owned by this layer-3 exit oif.
REQ: DONE	Indicates that the oif has been set to the bottom-layer hardware. The value may be: Waiting to be added. Usually it is waiting for a data stream to be triggered. DEL: Being deleted. DONE: Synchronized to the hardware.
OPORT 6	Indicates that the oif has a layer-2 interface with the interface number of 6.
MLD-SNP	Indicates that the interface is created based on MLD SNOOPING. Alternatively, the value may be one of the following options: ROUTER: Indicates that the interface is created based on the layer-3 protocol. INHERIT_FM_MLD_SNP: Indicates that the interface is created based on the MLD SNOOPING protocol inherited from other entries.

REQ: DONE	Indicates that the interface has been set to the bottom-layer hardware. The value may be: ADD: Waiting to be added. Usually it is waiting for a data stream to be triggered. DEL: Being deleted. DONE: Synchronized to the hardware.

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported on only switches.

2.16 show msf6 nsf

Use this command to display the multicast non-stop forwarding configuration.

show msf6 nsf

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays the multicast non-stop forwarding configuration.

```
Orion_B54Q# show msf6 nsf
Multicast HA Parameters
-----------------------------------------------+----------+
protocol convergence timeout     120 secs
flow leak interval        20 secs
```

Related Commands

Command	Description
msf6 nsf	Multicast non-stop forwarding.

Platform Description This command is supported on only switches.

3 IGMP Commands

3.1 clear ip igmp group

Use this command to clear dynamic group member information obtained from the response messages in the IGMP buffer.

clear ip igmp group [*group-address* [*interface-type interface-number*]]

Parameter Description

Parameter	Description
group-address	32-bit multicast group IP address, namely Category D address. 8 bits are in one group in decimal form. Groups are separated with dots.
interface-type	Interface type
interface-number	Interface number

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide The IGMP buffer includes a list that contains the multicast groups that the hosts in the direct subnet join. If the device joins a group, this group will be included in this list. To delete all the entries from the IGMP buffer, use the **clear ip igmp group** command without parameters.

Configuration Examples The following example clears all group entries.

```
Orion_B54Q# clear ip igmp group
```

Related Commands

Command	Description
show ip igmp groups	N/A
show ip igmp interface	N/A

Platform Description N/A

3.2 clear ip igmp interface

Use this command to clear the IGMP entry for the interface.

clear ip igmp [**vrf** *vrf-name*] **interface** *interface-type interface-number*

Parameter Description

Parameter	Description
vrf vrf-name	Specifies a VRF.

interface-type	Interface type
interface-number	Interface number

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to clear the information on the interface that is generated when IGMP is configured.

Configuration Examples The following example clears the IGMP entry for the interface.

```
Orion_B54Q# clear ip igmp interface gigabitEthernet 4/1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.3 ip igmp access-group

Use this command to control a multicast group on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp access-group *access-list*
no ip igmp access-group
default ip igmp access-group

Parameter Description

Parameter	Description
access-list	Name of access control list in the range from 1 to 199, 1300 to 2699, or characters.

Defaults This command is disabled by default.

Command Mode Interface configuration mode

Usage Guide You can add several multicast groups into the specific interfaces of the host in a subnet. These multicast groups can be controlled using **ip igmp access-group**.

⚠ With the IGMPv3 enabled, when the multicast group accesses the control command, the extended ACL is associated. If the IGMP report information received is (S1,S2,S3…Sn,G), the corresponding ACL will be used by this command to the (0, G) for the matching check. In order

to use this command normally, the (0,G) must be configured explicitly for the extended ACL so as to implement the normal filtering of (S1, S2, S3…Sn,G).

Configuration Examples

The following example adds the interface Ethernet 0/1 to the group 225.2.2.2 .

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# access-list 1 permit 225.2.2.2 0.0.0.0
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ip igmp access-group 1
```

The following example associates the group control list with the extended ACL on the interface Eth 0/1 which only processes the igmp protocol packets with source address 1.1.1.1 and group address 233.3.3.3.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip access-list extended ext_acl
Orion_B54Q(config-ext-nacl)# permit ip host 1.1.1.1 host 233.3.3.3
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ip igmp access-group ext_acl
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.4 ip igmp immediate-leave group-list

In the IGMPversion2 and IGMPversion3 versions, use this command to shorten the delay of leaving a group. This command is used when a single receiving host is connected to a single interface.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp immediate-leave group-list *access-list*
no ip igmp immediate-leave
default ip igmp immediate-leave

Parameter Description

Parameter	Description
access-list	Name of access control list

Defaults

This function is disabled by default.

Command Mode

Interface configuration mode

Usage Guide

If this command is not configured, the device will send a particular group query message upon receiving the leaving message from the interface. When the host response is timeout, the device

stops forwarding packets to this interface. The length of timeout depends on the query interval of the last member and IGMP robustness variable. The default value is 2s.
If this command is configured, the device does not send a particular group query message upon receiving the leaving message from the interface. Instead, it directly removes this interface from the IGMP buffer and notifies the IGMP protocol. This will shorten the time significantly.

Configuration Examples The following example provides the immediate leaving function for some multicast groups. Certainly, you must make sure each interface of these multicast groups have one group member only.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# access-list 1 permit 225.192.20.0 0.0.0.255
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ip igmp immediate-leave group-list 1
Orion_B54Q(config-if)# exit
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.5 ip igmp join-group

Use this command to configure the interface of the switch with host activities and adds it to a multicast group, so that the sub-switch can learn the corresponding group information. You can use this command to add an interface to a group.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp join-group *group-address*
no ip igmp join-group *group-address*
default ip igmp join-group *group-address*

Parameter Description

Parameter	Description
group-address	Multicast group IP address

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide This command enables the host activities for the IGMP interface. When the host function is enabled, the interface can initiate the report message and respond to the query message.
If the IGMP function is enabled on the interface, the interface can initiate the report message, so that the interface can learn the configured group members.

You can use this command to add an interface to a group.

Configuration Examples

The following example adds a host group member manually.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fast 0/1
Orion_B54Q(config-if)# ip igmp join-group 233.3.3.3
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.6 ip igmp last-member-query-count

Use this command to configure the value of **last-member-query-count**.

Use the **no** or **default** form of this command to restore the default setting.

ip igmp last-member-query-count *number*

no ip igmp last-member-query-count

default ip igmp last-member-query-count

Parameter Description

Parameter	Description
number	Value of the last member query count in the range from 2 to 7.

Defaults

The default is 2.

Command Mode

Interface configuration mode

Usage Guide

When the interface of the device receives an IGMPv2 group leaving message, the device waits for duration of query interval multiplying **last-member-query-count** time. The device will delete information about this group member if no group member report is received within the waiting time.

Configuration Examples

The following example sets the value of last member query count to 3.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface ethernet 0
Orion_B54Q(config-if)# ip igmp last-member-query-count 3
```

Related Commands

Command	Description
N/A	N/A

Platform

N/A

Description

3.7 ip igmp last-member-query-interval

Use this command to set the time interval of sending the group query message.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp last-member-query-interval *interval*
no ip igmp last-member-query-interval
default ip igmp last-member-query-interval

Parameter Description

Parameter	Description
interval	The interval sending the group query message in the range from1 to 255 in the unit of 0.1 second.

Defaults The default is 10.

Command Mode Interface configuration mode

Usage Guide When the interface of the device receives an IGMPv2 group leaving message, the device waits for duration of query interval multiplying **last-member-query-count** time. The device will delete information about this group member if no group member report is received within the waiting time.

Configuration Examples The following example sets the interval of sending the group query message to 20 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface eth 0
Orion_B54Q(config-if)# ip igmp last-member-query-interval 200
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.8 ip igmp limit

Use this command to globally set the maximum number of IGMP group records.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp [**vrf** *vrf-name*] **limit** *number* [**except** *access-list*]
no ip igmp limit
default ip igmp limit

Parameter Description

Parameter	Description
number	Maximum number of IGMP states, depending on devices
except	(Optional) Prevents the groups of the access list from taking part in calculation.
access-list	(Optional) Access list name

Defaults The default is 65536.

Command Mode Global configuration mode/ Interface configuration mode

Usage Guide Use this command to globally configure the maximum number of IGMP group records. The messages of the members exceeding the threshold will not be saved in the IGMP buffer and will not be forwarded.
This command can be configured globally or on the interface The messages of the members will be ignored if they exceed the interface or global configuration.

Configuration Examples The following example sets the maximum number to 300.

```
Orion_B54Q(config) # ip igmp limit 300
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.9 ip igmp mroute-proxy

Use this command to configure an interface as a mroute-proxy interface that can transmit messages to its uplink ports.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp mroute-proxy *interfname*
no ip igmp mroute-proxy
default ip igmp mroute-proxy

Parameter Description

Parameter	Description
interfname	Name of the relevant uplink interface

Defaults This function is disabled by default.

Command Interface configuration mode

Mode

Usage Guide After an uplink interface is configured as **proxy-service** interface, the interface can forward the IGMP messages sent by other members.

Configuration Examples The following example configures an interface to **mroute-proxy** interface.

```
Orion_B54Q(config-if)# ip igmp mroute-proxy fa 0/1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.10 ip igmp proxy-service

Use this command to enable the service function of all downlink **mroute-proxy** ports. If you run this command on an interface, the interface becomes the uplink port of the corresponding **mroute-proxy** that associates its downlink ports and maintains the group information reported by the downlink ports. Use the **no** or **default** form of this command to restore the default setting.

ip igmp proxy-service

no ip igmp proxy-service

default ip igmp proxy-service

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide The command can configure at most 32 proxy-service ports. The number of interface with IGMP Proxy enabled is limited by the supported multicast interface number. When receiving a query message, the **proxy-service** port responds according to the IGMP group member information maintained by the port itself. The member information maintained by the **proxy-service** port is collected from the interface configured with **mroute-proxy**. Therefore, if a port is configured with proxy-service, the port performs the host activities, but not the device activities.

If **switch port** operation is performed on an interface with proxy-service command configured, the **ip igmp mroute-proxy interface** command configured on the associated downlink ports is automatically deleted.

Configuratio The following example configures an interface to the **proxy-service** module.

n Examples

```
Orion_B54Q(config-if)# ip igmp proxy-service
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.11 ip igmp query-interval

Use this command to configure the query interval of an ordinary member.
Use the **no** or default form of this command to restore the default setting.
ip igmp query-interval *seconds*
no ip igmp query-interval
default ip igmp query-interval

Parameter Description

Parameter	Description
seconds	Query interval of ordinary member, in the range is from 1 to 18000 in the unit of seconds.

Defaults The default is 125 seconds.

Command Mode Interface configuration mode

Usage Guide The time to query an ordinary member can be changed by configuring the query interval of the ordinary member.

Configuration Examples The following example configures the query interval of ordinary member to 120 seconds on the interface Ethernet 0.

```
Orion_B54Q(config-if)# ip igmp query-interval 120
```

The following example c configures the query interval of ordinary member to the default value on the interface Ethernet 0.

```
Orion_B54Q(config-if)# no ip igmp query-interval
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.12 ip igmp query-max-response-time

Use this command to configure the maximum response interval.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp query-max-response-time *seconds*
no ip igmp query-max-response-time
default ip igmp query-max-response-time

Parameter Description

Parameter	Description
seconds	The maximum response interval, in the range from 1 to 25 seconds

Defaults The default is 10 seconds.

Command Mode Interface configuration mode

Usage Guide This command controls the interval for the respondent to respond the query message before the device deletes the group information.

Configuration Examples The following example configures the maximum response interval to 20s on the interface Ethernet 0.

```
Orion_B54Q(config-if)# ip igmp query-max-response-time 20
```

The following example configures the maximum response interval to the default value on the interface Ethernet 0.

```
Orion_B54Q(config-if)# no ip igmp query-max-response-time
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.13 ip igmp query-timeout

Use this command to configure the time the device waits before it takes over as the querier.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp query-timeout *seconds*
no ip igmp query-timeout
default ip igmp query-timeout

Parameter Description

Parameter	Description
seconds	Time the device waits before it takes over as the querier, in the

	range from 60 to 300 in the unit of seconds.

Defaults The default is 255 seconds.

Command Mode Interface configuration mode

Usage Guide IGMPv2 should be run for this command to work. By default, Cisco sets the waiting time of the device to two times of the query interval of **ip igmp query-interval**. In Orion_B54Q, the default value is set to 255s. This device becomes the querier if no query packet is received in this duration.

Configuration Examples The following example configures the time the device waits before it takes over as the querier to 200s on the interface Ethernet 0/1.

```
Orion_B54Q(config-if)# ip igmp query-timeout 200
```

The following example configures the time the device waits before it takes over as the querier to the default value on the interface Ethernet 0/1.

```
Orion_B54Q(config-if)# no ip igmp query-timeout
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.14 ip igmp robustness-variable

Use this command to change the value of the robustness variable.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp robustness-variable *number*
no ip igmp robustness-variable
default ip igmp robustness-variable

Parameter Description

Parameter	Description
number	The value of robustness variable, in the range from 2 to 7

Defaults The default is 2.

Command Mode Interface configuration mode

Usage Guide N/A

Configuration Examples The following example sets the value of robustness variable to 3.

```
Orion_B54Q# configure terminal
```

```
Orion_B54Q(config)# interface ethernet 0
Orion_B54Q(config-if)# ip igmp robustness-variable 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.15 ip igmp ssm-map enable

Use this command to enable the **igmp ssm-map** function in the global configuration mode.
Use the **no** form of this command to restore the default setting.
ip igmp [**vrf** *vrf-name*] **ssm-map enable**
no ip igmp [**vrf** *vrf-name*] **ssm-map enable**
default ip igmp [**vrf** *vrf-name*] **ssm-map enable**

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide If this command is configured, the dynamically learned group information is added forcibly to the associated source record. This command is usually used together with the **ip igmp ssm-map static** command.

Configuration Examples The following example enables the **igmp ssm-map** function in the global configuration mode.

```
Orion_B54Q(config)#  ip igmp ssm-map enable.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.16 ip igmp ssm-map static

Use this command to map the static **ssm-map** source IP address to the group records in the global

mode.

Use the **no** or **default** form of this command to restore the default setting.

ip igmp [**vrf** *vrf-name*] **ssm-map static** *access-list a.b.c.d*

no ip igmp [**vrf** *vrf-name*] **ssm-map static** *access-list a.b.c.d*

default ip igmp [**vrf** *vrf-name*] **ssm-map enable**

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.
access-list	ACL name in the range 1 to 99, 1300 to 1999 or characters.
a.b.c.d	Unicast address mapped to the group record.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command is used together with the **ip igmp ssm-map enable** command. After configuration, the port maps the corresponding source IP address to all received messages below **v3**.

Configuration Examples The following example maps the source address 192.168.2.2 to all group records permitted by ACL 11.

```
Orion_B54Q(config)#  ip igmp ssm-map static 11 192.168.2.2.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.17 ip igmp static-group

Use this command to directly add an interface to a group.

Use the **no** or **default** form of this command to restore the default setting.

ip igmp static-group *group-address*

no ip igmp static-group *group-address*

default ip igmp static-group *group-address*

Parameter Description

Parameter	Description
group-address	Multicast group IP address

Defaults The switch is not added to a multicast group by default.

Command Mode Interface configuration mode

Usage Guide This command directly adds an interface to a multicast group. The difference from **join-group** is that it directly adds an interface to the group without interacting with a report message.
You can use this command to add an interface to a group.

Configuration Examples The following example adds a host group member manually.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fast 0/1
Orion_B54Q(config-if)# ip igmp static-group 233.3.3.3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.18 ip igmp version

Use this command to set the version number of IGMP to be used on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp version { **1** | **2** | **3** }
no ip igmp version
default ip igmp version

Parameter Description

Parameter	Description
{ **1** | **2** | **3** }	Three version numbers, in the range from 1 to 3

Defaults The default is 2.

Command Mode Interface configuration mode

Usage Guide Use this command to globally configure the IGMP version. It should be noted that IGMP will reset after configuration.

Configuration Examples The following example sets the version number to 2.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface ethernet 0
Orion_B54Q(config-if)# ip igmp version 2
```

Related

Command	Description

Commands		
	N/A	N/A

Platform Description N/A

3.19 ip igmp enforce-router-alter

Use this command to receive IGMP report packets with the option of router-alter.
ip igmp enforce-router-alter

Use the **no** form of this command to receive all IGMP report packets.
no ip igmp enfore-router-alter

Use the **default** form of this command to restore the default setting.
default ip igmp enfore-router-alter

Parameter Description	Parameter	Description
	N/A	N/A

Defaults All IGMP report packets are received by default.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example receives IGMP report packets with the option of router-alter..

```
Orion_B54Q# configure terminal
Orion_B54Q(config)#ip igmp enforce-router-alter
```

Platform Description N/A

3.20 ip igmp enforce-source-subnet

Use this command to receive only the IGMP report packet containing the source address in the same network segment as the port.
ip igmp [**vrf** *vrf-name*] **enforce-source-subnet**

Use the **no** form of this command to restore the default setting.
no ip igmp [**vrf** *vrf-name*] **enforce-source-subnet**

Use the **default** form of this command to restore the default setting.

default ip igmp [**vrf** *vrf-name*] **enforce-source-subnet**

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.

Defaults The source IP address is not checked by default.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example receives only the IGMP report packet containing the source address in the same network segment as the port.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip igmp enforce-source-subnet
```

Platform Description N/A

3.21 show ip igmp groups

Use this command to display the groups directly connected to the device and the group information learnt from IGMP.

show ip igmp [**vrf** *vrf-name*] **groups** [*group-address* | *interface-type*] *interface-number*] [**detail**]

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.
group-address	32-bit multicast group IP address, namely Category D address. 8 bits are in one group in decimal form. Groups are separated with dots.
interface-type	Interface type
interface-number	Interface number
detail	Displays the detailed information
N/A	Displays the information about all the groups

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command without any parameters to display group address, interface type, and information about all the multicast groups directly connected to the interface. Information about a specific group

is displayed if a group address is added to the command.

Configuration Examples

The following example displays information about all the groups.

```
Orion_B54Q# show ip igmp groups
IGMP Connected Group Membership
Group Address   Interface   Uptime  Expires     Last Reporter
224.0.1.1   eth2    00:00:09   00:04:17   10.10.0.82
224.0.1.24      eth2    00:00:06   00:04:14   10.10.0.84
224.0.1.40  eth2    00:00:09   00:04:15   10.10.0.91
224.0.1.60      eth2    00:00:05   00:04:15   10.10.0.7
239.255.255.250 eth2    00:00:12   00:04:15   10.10.0.228
239.255.255.254 eth2    00:00:08   00:04:13   10.10.0.84
```

The following example displays detailed information about a specific group.

```
Orion_B54Q# show ip igmp groups 224.1.1.1 detail
Interface         : eth1
Group: 224.1.1.1
Uptime: 00:00:42
Group mode: Include
Last reporter: 192.168.50.111
TIB-A Count: 2
TIB-B Count: 0
Group source list: (R - Remote, M - SSM Mapping)
Source Address Uptime v3 Exp Fwd Flags
192.168.55.55 00:00:42 00:03:38 Yes R
192.168.55.66 00:00:42 00:03:38 Yes R
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.22 show ip igmp interface

Use this command to display the information of this interface.

show ip igmp [**vrf** *vrf-name*] **interface** [*interface-type interface-number*]

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.
interface-type	Interface type.
interface-number	Interface number.

N/A	Displays information about all the interfaces.

Defaults N/A

Command Mode User EXEC mode/ Privileged EXEC mode

Usage Guide Run this command without any parameter, and all interface information is displayed by default.

Configuration Examples The following example displays the information of all the interfaces.

```
Orion_B54Q# show ip igmp interface
Interface vlan1.1 (Index 4294967295)
IGMP Active, Non-Querier, Version 3 (default)
IGMP querying device is 0.0.0.0
IGMP query interval is 125 seconds
IGMP querier timeout is 255 seconds
IGMP max query response time is 10 seconds
```

Last member query response interval is 1000 milliseconds

```
Group Membership interval is 260 seconds|
IGMP Snooping is globally enabled|
IGMP Snooping is enabled on this interface
IGMP Snooping fast-leave is not enabled
IGMP Snooping querier is not enabled
IGMP Snooping report suppression is enabled
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.23 show ip igmp ssm-mapping

Use this command to display the **ssm-map** information of the IGMP configuration.

show ip igmp [**vrf** *vrf-name*] **ssm-mapping** [*A.B.C.D*]

Parameter Description

Parameter	Description
vrf vrf-name	Specifies the VRF.
A.B.C.D	Source address to be mapped

Defaults N/A

Command Privileged EXEC mode

Mode

Usage Guide Run this command without any parameter, and all SSM-MAP information is displayed.

Configuration Examples The following example displays the **ssm-map** configuration information.

```
Orion_B54Q# sh ip igmp ssm-mapping
SSM Mapping: Enabled
Database    : Static mappings configured
Show the group information of group 233.3.3.3 to be mapped
Orion_B54Q#show ip igmp ssm-mapping 233.3.3.3
Group address: 233.3.3.3
Database     : Static
Source list  : 192.3.3.3
               : 3.3.3.3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4 MLD Commands

4.1 clear ipv6 mld group

Use this command to clear the dynamic group member learned by MLD protocol. The dynamic group member refers to the group member record generated by learning the report packets.

clear ipv6 mld group [*group-address*] [*interface-type interface-number*]

Parameter Description

Parameter	Description
group-address	IPv6 multicast group address with 128 bits
interface-type	The associated interface type
interface-number	The associated interface number

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide MLD maintains a list of the multicast groups to be added to the host in the directly-connected sub-net. Use the **clear ipv6 mld group** command to remove all dynamic group member record from the MLD group member list.

Configuration Examples The following example clears all group records.

```
Orion_B54Q# clear ipv6 mld group
```

The following example clears one group record.

```
Orion_B54Q# clear ipv6 mld group ff1e::100
```

The following example s clears the record on a specified interface.

```
Orion_B54Q# clear ipv6 mld group ff1e::100 interfa fa0/1
```

Related Commands

Command	Description
show ipv6 mld groups	N/A
show ipv6 mld interface	N/A

Platform Description N/A

4.2 clear ipv6 mld interface

Use this command to clear all MLD statistical information and the group member records on the interface.

clear ipv6 mld interface *interface-type interface-number*

Parameter Description	Parameter	Description
	interface-type	The interface type
	interface-number	The interface ID

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to clear all group information and some packet statistical information learned by LDP on the interface. Those packet statistical information include the number of the received report packets, the number of the done packets and the the number of the group members on the interface.

Configuration Examples The following example clears all MLD statistical information and the group member records on the interface.

```
Orion_B54Q# clear ipv6 mld interface fa 1/1
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

4.3 ipv6 mld access-group

Use this command to filter the specific requested group on the interface. Only the report packets in accordance with the corresponding ACL are allowed to be processed.
Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld access-group *access-list*
no ipv6 mld access-group
default ipv6 mld access-group

Parameter Description	Parameter	Description
	access-list	The IPv6 ACL name

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide Use this command to filter some groups on the interface and associate with the corresponding ACLs. The correspondent ACL deny report packets will be discarded. This command supports the

extended ACL and the source record information of the MLDv2 packets can be filtered.

⚠ The multicast group access control command is associated with the extended ACL. When the received MLD report mesage is (S1,S2,S3…Sn,G), use this command to match and check the (0,G) message using the corresponding ACL. To this end, a (0,G) must be configured for the extended ACL to filter the (S1,S2,S3…Sn,G).

Configuration Examples The following example enables the group information carried in the report packets to be in accordance with acl for the normal handling on the interface Eth0/1.

```
Orion_B54Q(config)#ipv6 access-list acl
Orion_B54Q(config-ipv6-acl)#permit ipv6 ::/64 ff66::100/64
Orion_B54Q(config-ipv6-acl)#permit ipv6 2222::3333/64 ff66::100/64
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ipv6 mld access-group acl
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.4 ipv6 mld immediate-leave group-list

Use this command to set the immediate-leave mechanism. With this command configured, the group within the range of group-list, will not send the query packet for the specific group and will remove this group from the group member list immediately after receiving the corresponding done packets. This function is used in the condition that there is only one multicast source that receives the host request on an interface. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld immediate-leave group-list *access-list*

no ipv6 mld immediate-leave group-list

default ipv6 mld immediate-leave group-list

Parameter Description

Parameter	Description
access-list	The IPv6 ACL name

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide Without this command configured, when the device receives the MLD leave packets, the request packets for the specific groups will be sent. If there is still no host reply within the response time, the device will remove the corresponding group record from the group member list. The timeout interval

is determined by the last member query interval and the MLD robustness variable, and the default value is 2s.
With this command configured, when the device receives the MLD leave packets, it will not send the request packets for the specific groups, but remove the group information immediately, which reduces the leave delay greatly in the condion that there is only one host connecting to the interface.

Configuration Examples

The following example configures the immediate-leave function.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)#ipv6 access-list acl
Orion_B54Q(config-ipv6-acl)#permit ipv6 2222::3333/64 ff66::100/64
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ipv6 mld immediate-leave group-list acl
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.5 ipv6 mld join-group

Use this command to configure the host action for the switch interface and add the related multicast group to the interface.
Use the **no** or default form of this command to restore the default setting.
ipv6 mld join-group *group-address*
no ipv6 mld join-group *group-address*
default ipv6 mld join-group group-address

Parameter Description

Parameter	Description
group-address	The IPv6 non-management multicast group address

Defaults

The interface is not added to any group by default.

Command Mode

Interface configuration mode

Usage Guide

Use this command to enable the MLD host action on the interface. The interface can not only send the packets initiatively, but also reply to the query packets.
Use this command if it is necessary to join a group member to the interface.
It is worth mentioning that if the group address whose beginning characters are 0xFF*1,0xFF3*, it fails to configure this command. The group address whose beginnning characters are 0xFF*2 fails to form a group.

Configuration Examples The following example adds the host group member:

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fast 0/1
Orion_B54Q(config-if)# ipv6 mld join-group ff55::100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.6 ipv6 mld last-member-query-count

last-member-query-count represents that after the interface with MLD enabled receives the done packets, the count number of the times of sending the query packets to the specific group. Use this command to set the last-member-query-count number.
Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld last-member-query-count *number*
no ipv6 mld last-member-query-count
default ipv6 mld last-member-query-count

Parameter Description

Parameter	Description
number	The last member query count number. The valid range is 2-7.

Defaults The default is 2.

Command Mode Interface configuration mode

Usage Guide With the MLD leave packets received on the interface, if there is no group reply within the timeout interval, this group will be removed from the MLD group member list on the interface. The timeout interval is the query interval for the specific group(multiplied by the value of **mld last-member-query-count**) plus half the reply time.

Configuration Examples The following example sets the last-member-query-count number to 3.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ipv6 mld last-member-query-count 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description

4.7 ipv6 mld last-member-query-interval

Use this command to set the time interval of sending the query packets to the specific group. Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld last-member-query-interval *interval*
no ipv6 mld ast-member-query-interval
default ipv6 mld last-member-query-interval

Parameter Description

Parameter	Description
interval	The valid range is 1-255 in the unit of 0.1 seconds.

Defaults The default is 10 seconds.

Command Mode Interface configuration mode

Usage Guide With the MLD leave packets received on the interface, if there is no group reply within the timeout interval, this group will be removed from the MLD group member list on the interface. The timeout interval is the query interval for the specific group(multiplied by the value of **mld last-member-query-count**) plus half the reply time.

Configuration Examples The following example sets the mld last-member-query-interval to 2 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fa 0/1
Orion_B54Q(config-if)# ipv6 mld last-member-query-interval 20
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.8 ipv6 mld limit

Use this command to enable to learn the max-number of the group member through the MLD protocol.
Use the **no** form of this command to restore the default setting.
ipv6 mld limit *number* [**except** *access-list*]
no ipv6 mld limit *number* [**except** *access-list*]

default ipv6 mld limit *number* **[except** *access-list* **]**

Parameter Description

Parameter	Description
number	The maximum number of the group member learned by the MLD
except access-list	(Optional) The ACL beyond the configured mld limit

Defaults The default is 1024.

Command Mode Interface configuration mode/Global configuration mode

Usage Guide Use this command to set the max-number of the group members learned through the MLD in the global configuration mode. If the group member number has exceeded the limit, the received report packets later will be discarded and fail to form the group record.
If the except list has also been set at the same time, the group member packets, including the packets in the access-list, will be free from the member number limit.
This command can also be used in the interface configuration mode. The configurations in two different configuration modes are independent. If the number limit in the global configuration mode is lower than the one in the interface configuration mode, the former configuration takes precedence.

Configuration Examples The following example sets the MLD limit to 300.

```
Orion_B54Q(config-if)# ipv6 mld limit 300
```

The following example sets the MLD limit to 300, but the configured acl can still learn.

```
Orion_B54Q(config-if)# ipv6 mld limit 300 except acl
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.9 ipv6 mld mroute-proxy

Use this command to enable the interface to forward the packets to the correspondent connected interface.
Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld mroute-proxy *interface-type interface-number*
no ipv6 mld mroute-proxy
default ipv6 mld mroute-proxy

Parameter Description

Parameter	Description
interface-type interface-	The correspondent connected interface

number	

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide After the connected interface has been configured as the proxy-service interface, it can forward the MLD packets sent from other members

Configuration Examples The following example sets the interface as the mroute-proxy interface.

```
Orion_B54Q(config-if)# ipv6 mld mroute-proxy fa 0/1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.10 ipv6 mld proxy-service

Use this command to enable the proxy-service function for the interface connected with the mroute-proxy interface in the downward direction. After configuring this command, the interface becomes the one connected with the mroute-proxy in the upward direction, and associates with and maintains the group information from the interfaces in the downward direction. Use the **no** or **default** form of this command to disable the default setting.

ipv6 mld proxy-service

no ipv6 mld proxy-service

default ipv6 mld proxy-service

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Interface configuration mode

Usage Guide The configurable max-number limit is 32. The number of the interfaces with MLD Proxy enabled is limited by the number multicast interfaces supported device. After receiving the query packet, the proxy-service interface replies according to the member information, which are collected from the mroute-proxy interface and maintained by the proxy-service interface itself. With proxy-service configured, this interface owns the host action rather than the router action.

The **ipv6 mld mroute-proxy interface** command configuration on the associated interface in the downward direction is removed automatically if the switchport operation is performed on the interfaces.

Configuration Examples The following example sets the interface proxy-service.

```
Orion_B54Q(config-if)# ipv6 mld proxy-service
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.11 ipv6 mld querier-timeout

Use this command to set the querier alive period. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld querier-timeout *seconds*

no ipv6 mld querier-timeout

default ipv6 mld querier-timeout

Parameter Description

Parameter	Description
seconds	The querier alive period, in the range from 60 to 300 in the unit of seconds.

Defaults The default is 255 seconds.

Command Mode Interface configuration mode

Usage Guide After the querier sends the query packet, the querier will wait to receive the query packet sent by another querier within the alive period. If no packet is received by the first querier within the alive period, then the first querier takes itself as the only querier on the network segment.

Configuration Examples The following example sets the querier alive period to 200 seconds.

```
Orion_B54Q(config-if-Ethernet 0/1)# ipv6 mld querier-timeout 200
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.12 ipv6 mld query-interval

Use this command to set the query interval for the general member. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld query-interval *seconds*

no ipv6 mld query-interval

default ipv6 mld query-interval

Parameter Description

Parameter	Description
seconds	The query interval for the general member, in the range from 1 to 18000 in the unit of seconds.

Defaults The default is 125 seconds.

Command Mode Interface configuration mode

Usage Guide The interval of the timer for sending the general query packets can be changed by configuring the query-interval for the general member.

Configuration Examples The following example sets the query-interval for the general member on the interface Ethernet 0.

```
Orion_B54Q(config-if)# ipv6 mld query-interval 120
```

The following example sets the query-interval for the general member to the default value on the interface Ethernet 0.

```
Orion_B54Q(config-if)# no ipv6 mld query-interval
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.13 ipv6 mld query-max-response-time

Use this command to set the maximum response time.

Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld query-max-response-time *seconds*

no ipv6 mld query-max-response-time

default ipv6 mld query-max-response-time

Parameter Description

Parameter	Description

seconds	The maximum response time, in the range from 1 to 25 in the unit of seconds

Defaults The default is 10 seconds.

Command Mode Interface configuration mode

Usage Guide Use this command to control the maximum response time of the host after the device sends the query packets. If there is no response within the maximum response time, MLD will remove the corresponding group from the group member list.

Configuration Examples The following example sets the maximum query response time on the interface gigabitEthernet 0/1.

```
Orion_B54Q(config-if)# ipv6 mld query-max-response-time 20
```

The following example sets the maximum query response time on the interface gigabitEthernet 0/1.

```
Orion_B54Q(config-if)# no ipv6 mld query-max-response-time
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.14 ipv6 mld robustness-variable

Use this command to set querier robustness value. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld robustness-variable *number*

no ipv6 mld robustness-variable

default ipv6 mld robustness-variable

Parameter Description

Parameter	Description
number	Sets the querier robustness value, in the range from 2 to 7.

Defaults The default is 2.

Command Mode Interface configuration mode

Usage Guide N/A

Configuration Examples The following example sets the querier robustness value to 3.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface ethernet 0
```

```
Orion_B54Q(config-if)# ipv6 mld robustness-variable 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.15 ipv6 mld ssm-map enable

Use this command to enable the mld ssm-map function.
Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld ssm-map enable
no ipv6 mld ssm-map enable
default ipv6 mld ssm-map enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide With this command configured, the group information dynamically learned will be added to the related source record forcibly. Usually, this command is set with the **ipv6 mld ssm-map static** command.

Configuration Examples The following example enables the mld ssm-map function in the global configuration mode.

```
Orion_B54Q(config)# ipv6 mld ssm-map enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.16 ipv6 mld ssm-map static

Use this command to set the mld ssm-map static mapping source record in the global configuration mode.

Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld ssm-map static *access-list X:X:X:X::X*
no ipv6 mld ssm-map static *access-list X:X:X:X::X*
default ipv6 mld ssm-map static *access-list source-address*

Parameter Description

Parameter	Description
access-list	Sets the IPv6 ACL name.
X:X:X:X::X	Sets the unicast address for the group record mapping.

Defaults There is no mapping source address by default.

Command Mode Global configuration mode

Usage Guide This command is used with the **ipv6 mld ssm-map enable** command. With this command configured, the received mldv1 packets are mapped to the correspondent source record.

Configuration Examples The following example maps all group record of the ACL name to the source address 4444::1234.

```
Orion_B54Q(config)# ipv6 mld ssm-map static te 4444::1234
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.17 ipv6 mld static-group

Use this command to add an interface to a group statically. Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld static-group *group-address*
no ipv6 mld static-group *group-address*
default ipv6 mld static-group *group-address*

Parameter Description

Parameter	Description
group-address	Sets the IPv6 non-management multicast group address.

Defaults The interface is not added to any group statically.

Command Mode Interface configuration mode

Usage Guide Use this command to add a multicast group to the interface directly. The difference from the join-

group is that the packet interaction is not necessary.
Use this command when it is necessary to add a group member to the interface. It is worth mentioning that only the **no ipv6 mld static-group** command can be used to delete the group, but not the **clear** command.

Configuration Examples

The following example adds interface Eth0/1 to group ff55::3 statically.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fast 0/1
Orion_B54Q(config-if)# ipv6 mld static-group ff55::3
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.18 ipv6 mld version

Use this command to set the MLD version number on the interface. Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld version { **1** | **2** }
no ipv6 mld version
default ipv6 mld version

Parameter Description

Parameter	Description
{ 1 | 2 }	Sets the MLD version number.

Defaults

The default is 2.

Command Mode

Interface configuration mode

Usage Guide

Use this command to control the MLD version number.

Configuration Examples

The following example sets the MLD version 1.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface ethernet 0/1
Orion_B54Q(config-if)# ipv6 mld version 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description

4.19 show ipv6 mld groups

Use this command to display the group connected with the switch and the group information learned from the MLD.

show ipv6 mld groups [*group-address* | *interface-type interface-number*] [**detail**]

Parameter Description

Parameter	Description
group-address	Sets the IPv6 multicast group address in 128 bits.
interface-type	Sets the interface type.
interface-number	Sets the interface number.
detail	Displays the information in detail.
	Displays all the group information.

Defaults N/A

Command Mode Privileged EXEC mode /Interface configuration mode

Usage Guide Use this command without the parameters to display the information including the group address, the interface type and the multicast group information. Use this command with a parameter to display the information on a specific group.

Configuration Examples The following example displays all group information.

```
Orion_B54Q# show ipv6 mld groups
MLD Connected Group Membership
Group Address  Interface Uptime Expires  Last Reporter
ff66::1 VLAN1 00:10:57 00:02:16 fe80::2d0:f8ff:fe22:3378
```

The following example displays the detailed information.

```
Orion_B54Q# show ipv6 mld groups detail
Interface:      VLAN 1
Group:          ff66::1
Uptime:         00:10:26
Group mode:     Exclude (Expires: 00:02:47)
Last reporter:  fe80::2d0:f8ff:fe22:3378
Source list is empty
```

Related Commands

Command	Description
N/A	N/A

Platform Description

4.20 show ipv6 mld interface

Use this command to display the configurations on the interface.

show ipv6 mld interface [*interface-type interface-number*]

Parameter Description

Parameter	Description
interface-type	Sets the interface type.
interface-number	Sets the interface number.

Defaults N/A

Command Mode User EXEC mode / Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays the state information of all interfaces.

```
Orion_B54Q# show ipv6 mld interface
Interface VLAN 2 (Index 4098)
 MLD Enabled, Inactive, Version 2 (default)
 MLD interface limit is 1024
 MLD interface has 0 group-record states
 MLD interface has 1 join-group records
 MLD interface has 0 static-group records
 MLD activity: 0 joins, 0 leaves
 MLD query interval is 125 seconds
 MLD querier timeout is 255 seconds
 MLD max query response time is 10 seconds
 Last member query response interval is 10 (1/10s)
 Last member query count is 2
 Group Membership interval is 260
 Robustness Variable is 2
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4.21 show ipv6 mld ssm-mapping

Use this command to display the mapping information of the source address for the group record.

show ipv6 mld ssm-mapping [*group-address*]

Parameter Description

Parameter	Description
group-address	Displays the group address.

Defaults N/A

Command Mode User EXEC mode / Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays the state information of all interfaces.

```
Orion_B54Q# show ipv6 mld interface
Interface VLAN 2 (Index 4098)
 MLD Enabled, Inactive, Version 2 (default)
 MLD interface limit is 1024
 MLD interface has 0 group-record states
 MLD interface has 1 join-group records
 MLD interface has 0 static-group records
 MLD activity: 0 joins, 0 leaves
 MLD query interval is 125 seconds
 MLD querier timeout is 255 seconds
 MLD max query response time is 10 seconds
 Last member query response interval is 10 (1/10s)
 Last member query count is 2
 Group Membership interval is 260
 Robustness Variable is 2
```

Related Commands

Command	Description
N/A	N/A

5 PIM-DM Commands

5.1 clear ip pim dense-mode track

Use this command to clear the statistics of PIM-DM packets.

clear ip pim dense-mode track

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to reconfigure the start time of the statistics and clear the PIM packet counter.

Configuration Examples The following example clears the statistics of PIM-DM packets.

```
Orion_B54Q# clear ip pim dense-mode track
```

Related Commands

Command	Description
show ip pim dense-mode track	Displays the statistics of the PIM packets.

Platform Description N/A

5.2 ip pim dense-mode

Use this command to enable PIM-DM on the interface.

Use the **no** or **default** form of this command to restore the default setting.

ip pim dense-mode

no ip pim dense-mode

default ip pim dense-mode

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Interface configuration mode

Mode

Usage Guide

- Before enabling the PIM-DM, enable the multicast forwarding function in the global configuration mode. Otherwise, the multicast data packet cannot be forwarded even the PIM-DM is enabled.
- Once the PIM-DM is enabled, the IGMP is enabled automatically on the interface without manual configuration.
- During the execution of this command, if the prompt "Failed to enable PIM-DM on <Interface Name>, resource temporarily unavailable, please try again" appears, re-execute this command.
- During the execution of this command, if the prompt "PIM-DM Configure failed! VIF limit exceeded in NSM!!!" appears, it indicates the allowed configured multicast interface number exceeds the upper limit of the multicast interfaces. In this case, if it's still necessary to enable the PIM-DM on the interface, delete the unnecessary PIM-DM, PIM-SM or DVMRP interfaces.
- It is not recommended to configure different multicast routing protocols on different interfaces of a device.

Configuration Examples

The following example enables PIM-DM on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim dense-mode
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

5.3 ip pim neighbor-filter

Use this command to enable the neighbor filtering on the interface. If the neighbor filtering is set, PIM-DM will not establish the peering relationship with this neighbor or will terminate the established peering relationship with this neighbor once the neighbor is denied by the filtering access list.
Use the **no** or **default** form of this command is to restore the default setting.

ip pim neighbor-filter *access-list*
no ip pim neighbor-filter *access-list*
default ip pim neighbor-filter *access-list*

Parameter Description

Parameter	Description
access-list	Access control list supporting numerical ACL in the range from 1 to

	99 and name ACL

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide N/A

Configuration Examples The following example enables the neighbor filtering on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim neighbor-filter 14
```

1. When the associated ACL rule is permit, only the neighbor address in ACL can be used as the PIM neighbor of the current interface. When the associated ACL rule is deny, the neighbor address in ACL cannot be used as the PIM neighbor of the current interface.
2. Peering relationship refers to the interaction of protocol packets between the PIM neighbors. If the peering relationship with a PIM device is terminated, the neighbor relationship with this device will not be established, and the PIM protocol packets from this device will not be received.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.4 ip pim override-interval

Use this command to reconfigure the override-interval of the hello message.
Use the **no** or **default** form of this command to restore the default setting.
ip pim override-interval *interval-milliseconds*
no ip pim override-interval
default ip pim override-interval

Parameter Description

Parameter	Description
interval-milliseconds	In the range from 1 to 65,535 in the unit of milliseconds

Defaults The default is 2,500 milliseconds.

Command Mode Interface configuration mode

Usage Guide Configuring the override-interval is to set the pruning veto time for the interface.

Configuration Examples The following example sets the override-interval to 300 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim override-interval 3000
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.5 ip pim propagation-delay

Use this command to reconfigure the propagation-interval of the hello message.
Use the **no** or **default** form of this command to restore the default setting.
ip pim propagation-delay *interval-milliseconds*
no ip pim propagation-delay
default ip pim propagation-delay

Parameter Description

Parameter	Description
interval-milliseconds	Propagation-interval of the hello message in the range from 1 to 32,767 in the unit of milliseconds

Defaults The default is 500 milliseconds.

Command Mode Interface configuration mode

Usage Guide Configuring the propagation-delay is to set the transmission delay time for the interface.

Configuration Examples The following example sets the propagation-delay to 600 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim propagation-delay 600
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.6 ip pim query-interval

Use this command to reconfigure the interval of sending the hello message.

Use the **no** or **default** form of this command to restore the default setting.

ip pim query-interval *interval-seconds*

no ip pim query-interval

default ip pim query-interval

Parameter Description

Parameter	Description
Interval-seconds	Interval of sending the hello message in the range from 1 to 65,535 in the unit of seconds

Defaults The default is 30 milliseconds.

Command Mode Interface configuration mode

Usage Guide If hello interval is set, the hello holdtime value will be updated to 3.5 times of hello interval.

Configuration Examples The following example sets the interval of sending the hello message to 123 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim query-interval 123
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.7 ip pim state-refresh disable

Use this command to prohibit the interface from processing and forwarding the PIM-DM state refresh messages.

Use the **no** or **default** form of this command to restore the default setting.

ip pim state-refresh disable

no ip pim state-refresh disable

default ip pim state-refresh disable

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, the PIM-DM state refresh messages can be processed and forwarded.

Command Mode Global configuration mode

Usage Guide When the state refresh function is disabled, the PIM-DM state refresh message is not processed and forwarded. The sent Hello message does not contain the status refresh option. Consequently, the SR Cap field will not be processed when the Hello message is received.

Configuration Examples The following example disables the processing of the PIM-DM state refresh message.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim state-refresh disable
```

- Generally, it is not recommended to disable the status refresh function because disabling this function may converge the PIM-DM multicast forwarding tree again that has been converged, resulting in unnecessary waste of bandwidth and oscillation of multicast routing table.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.8 ip pim state-refresh origination-interval

Use this command to set the interval of sending the PIM-DM state refresh message. The interval is the seconds elapsed between two state refresh messages.
Use the **no** or **default** form of this command to restore the default setting.
ip pim state-refresh origination-interval *interval-seconds*
no ip pim state-refresh origination-interval
default ip pim state-refresh origination-interval

Parameter Description

Parameter	Description
Interval-seconds	Interval of sending the PIM-DM update message in the range from 1 to 100 in unit of seconds

Defaults The default is 60 seconds.

Command Mode Interface configuration mode

Usage Guide N/A

Configuratio The following example sets the interval of sending the PIM-DM state refresh message to 65

n Examples seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface fastethernet 0/1
Orion_B54Q(config-if)# ip pim state-refresh
origination-interval 65
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.9 ip pim mib dense-mode

Use this command to switch the device from the PIM MIB sparse mode to the PIM MIB dense mode. Use the **no** form or **default** form of this command to switch back to the PIM MIB sparse mode.

ip pim mib dense-mode

no ip pim mib dense-mode

default ip pim mib dense-mode

Parameter Description

Parameter	Description
N/A	N/A

Defaults The device is in the PIM MIB sparse mode by default.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example switches the device from the PIM MIB sparse mode to the PIM MIB dense mode.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim mib dense-mode
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.10 show ip pim dense-mode interface

Use this command to display the information about the PIM-DM interface.

show ip pim dense-mode interface [*interface-type interface-number*] [**detail**]

Parameter Description

Parameter	Description
interface-type interface-number	Interface type and interface ID
detail	Displays details of the interface.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays the information about the PIM-DM interface.

```
Orion_B54Q# show ip pim dense-mode interface
Address   Interface  VIFIndex  Ver/Mode    Nbr
Mode Count
10.10.10.10 FastEthernet 0/45 3   v2/D          1
50.50.50.50 VLAN4           2       v2/D           1
```

Field	Description
Address	Primary IP address of the PIM-DM interface
Interface	Name of the PIM-DM interface
VIF Index	VIF ID (ID)
Ver/Mode	PIM version/mode
Nbr Count	Number of neighbors of the PIM-DM interface.

Related Commands

Command	Description
show ip pim dense-mode neighbor	Displays the information about the neighbors of the PIM-DM interface.

Platform Description N/A

5.11 show ip pim dense-mode mroute

Use this command to display the information about the PIM-DM routing table.

show ip pim dense-mode mroute [*group-or-source-address* [*group-or-source-address*]] [**summary**]

Parameter Description

Parameter	Description
group-or-source-address	Group address or source address
group-or-source-address	Group address or source address. Two addresses cannot both be the group addresses or the source addresses.
summary	Displays the brief information of routing entries.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays the information about the PIM-Dm routing table.

```
Orion_B54Q# show ip pim dense-mode mroute
PIM-DM Multicast Routing Table
(1.1.1.111, 229.1.1.1)
  MRT lifetime expires in 205 seconds
  RPF Neighbor: 50.50.50.1, Nexthop:50.50.50.1,VLAN 4
  Upstream IF: VLAN 4
    Upstream State: Pruned, PLT:200
    Assert State: NoInfo
  Downstream IF List:
    FastEthernet 0/45:
      Downstream State: NoInfo
      Assert State: Loser, AT:170
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.12 show ip pim dense-mode neighbor

Use this command to display the information about the PIM-DM neighbors.

show ip pim dense-mode neighbor [*interface-type interface-number*]

Parameter Description

Parameter	Description
interface-type interface-number	Interface type and interface ID

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays the information about the PIM-DM neighbors.

```
Orion_B54Q# show ip pim dense-mode neighbor
Neighbor-Address Interface      Uptime/Expires     Ver
10.10.10.1    FastEthernet 0/45 00:19:29/00:01:21  v2
50.50.50.1    VLAN 4              00:22:09/00:01:39  v2
```

Description of fields in the results:

Field	Description
Neighbor-Address	IP address of the neighbor
Interface	Name of the interface connecting the neighbor
Uptime/Expires	Valid time and aging time of the entry
Ver	PIM version

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.13 show ip pim dense-mode nexthop

Use this command to display the information about the PIM-DM next hop.

show ip pim dense-mode nexthop

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode

Usage Guide N/A

Configuration Examples The following example displays the information about the PIM-Dm next hop:

```
Orion_B54Q# show ip pim dense-mode nexthop
Destination  Nexthop   Nexthop   Nexthop   Metric Pref
                 Num       Addr      Interface
1.1.1.111      1        50.50.50.1  VLAN 4     0     1
```

Field	Description
Destination	Multicast source IP address
Nexthop Num	Number of next hop
Nexthop Addr	IP address of next hop
Nexthop interface	Interface connecting to the of next hop
Metric	Route metric
Pref	Route priority

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.14 show ip pim dense-mode track

Use this command to display the statistics of the PIM-DM packets.

show ip pim dense-mode track

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command is used to display the number of sent and received PIM packets during the period from the beginning of the statistics till now. When the system starts up, it sets the start time of the statistics. The start time of the statistics is reconfigured and the PIM packet counter is cleared on

calling the clear ip pim dense-mode track every time.

Configuration Examples

The following example displays the statistics of the PIM-DM packets.

```
Orion_B54Q# show ip pim dense-mode track
                PIM packet counters
Elapsed time since counters cleared: 00:04:03
                           received     sent
Valid PIMDM packets:         1             8
Hello:                       1             8
Join/Prune:                   0            0
Graft:                        0           0
Graft-Ack:                    0            0
Assert:                  0            0
State-Refresh:           0           0
PIM-SM-Register:         0           0
PIM-SM-Register-Stop:      0             0
PIM-SM-BSM:                  0             0
PIM-SM-C-RP-ADV:                0            0
Unknown Type:                0
Errors:
Malformed packets:       0
Bad checksums:           0
Unknown PIM version:        0
Send errors:                    0
```

Related Commands

Command	Description
clear ip pim dense-mode track	Clears the statistics of the PIM packets.

Platform Description

N/A

6 PIM-SM Commands

6.1 clear ip pim sparse-mode bsr rp-set

Use this command to clear all the RP information learnt dynamically.

clear ip pim sparse-mode [**vrf** *vid*] **bsr rp-set ***

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
*	Clears all RP-SET.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide All the RP information learnt dynamically can be cleared manually.

Configuration Examples The following example clears all the RP information learnt dynamically.

```
Orion_B54Q# clear ip pim sparse-mode bsr rp-set *
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.2 clear ip pim sparse-mode track

Use this command to reconfigure the start time of the statistics and clear the PIMv6 packet counter.

clear ip pim sparse-mode [**vrf** *vrf-name*] **track**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to reconfigure the start time of the statistics and clear the PIM packet counter.

Configuration Examples The following example clears the PIM packet counter.

```
Orion_B54Q# clear ip pim sparse-mode track
```

Related Commands

Command	Description
show ip pim sparse-mode track	Displays the PIM packet statistics.

Platform Description N/A

6.3 ip pim accept-bsr list

Use this command to confine the BSR address range.

Use the **no** or **default** form this command to restore the default setting.

ip pim [**vrf** *vid*] **accept-bsr list** *access-list*

no ip pim [**vrf** *vid*] **accept-bsr**

default ip pim [**vrf** *vid*] **accept-bsr**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
list *access-list*	IP standard number ACL

Defaults By default, the PIMSM router receives all external BSM packets.

Command Mode Global configuration mode

Usage Guide Use this command to limit the range of the legal BSR.

Configuration Examples The following example confines the BSR address range.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim accept-bsr list 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.4 ip pim accept-crp list

Use this command to confine the C-RP address range and the multicast group address range it

serves.

Use the **no** or **default** form of this command to restore the default setting,

ip pim [**vrf** *vid*] **accept-crp list** *access-list*

no ip pim [**vrf** *vid*] **accept-crp**

default ip pim [**vrf** *vid*] **accept-crp**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
list *access-list*	IP extension number ACL

Defaults By default, the elected BSR receives all external advertisements of candidate RPs.

Command Mode Global configuration mode

Usage Guide With this command configured on the candidate BSR, when this BSR becomes the elected BSR, it is able to limit the address range of the legal C-RP and the multicast group range it serves.

Configuration Examples The following example confines the C-RP address range and the multicast group address range it serves.

```
Orion_B54Q (config)# comfigure terminal
Orion_B54Q (config)# ip pim accept-crp list 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.5 ip pim accept-crp-with-null-group

Use this command to receive the C-RP-ADV packets whose prefix-count is 0.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **accept-crp-with-null-group**

no ip pim [**vrf** *vid*] **accept-crp-with-null-group**

default ip pim [**vrf** *vid*] **accept-crp-with-null-group**

Parameter Description

Parameter	Description
vrf *vid*	Specifies the VRF.

Defaults By default, the BSR does not receive the C-RP-ADV packets whose prefix-count is 0.

Command Mode

Usage Guide With this command configured on the candidate BSR, when this BSR becomes the elected BSR, it is able to receive the C-RP-ADV packets whose prefix-count is 0, and considers this C-RP supports all groups.

Configuration Examples The following example receives the C-RP-ADV packets whose prefix-count is 0.

```
Orion_B54Q (config)# configure terminal
Orion_B54Q (config)# ip pim accept-crp-with-null-group
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.6 ip pim accept-register list

Use this command to confine the address range of the (S,G) entry of the register packets.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **accept-register** { **list** *access-list* [**route-map** *map-name*] | **route-map** *map-name* [**list** *access-list*] }
no ip pim [**vrf** *vid*] **accept-register**
default ip pim [vrf vid] accept-register

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
list *access-list*	Uses an extended IP access list to define the (S, G) address range. Access control list supporting numerical ACL in the range of 100 to 199 and 2000 to 2699 and name ACL.
route-map *map-name*	Uses a route map to define the (S, G) address range.

Defaults The (S, G) address range is not confined by default.

Command Mode Global configuration mode

Usage Guide This command is used to confine the source IP address of register messages on RP.

Configuration Examples The following example confines the source address of register packets on the RP.

```
Orion_B54Q (config)# ip pim accept-register list 100
Orion_B54Q (config)# access-list 100 permit ip 192.168.195.0 0.0.0.255
```

```
225.1.1.1 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.7 ip pim bsr-border

Use this command to configure the BSR border.

Use the **no** or **default** form of this command to restore the default setting.

ip pim bsr-border

no ip pim bsr-border

default ip pim bsr-border

Parameter Description

Parameter	Description
N/A	N/A

Defaults No BSR border is configured by default.

Command Mode Interface configuration mode

Usage Guide To restrain BSM flooding, configure BSR border on the interface so that the interface drops BSM packets upon receiving them and the BSM packets are not forwarded from this interface.

Configuration Examples The following example sets the BSR border on the interface *g 0/3*

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim bsr-border
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.8 ip pim bsr-candidate

Use this command to configure the C-BSR.

Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim [**vrf** *vid*] **bsr-candidate** *interface-type interface-number* [*hash-mask-length* [*priority-value*]]
no ipv6 pim [**vrf** *vid*] **bsr-candidate**
default ip pim [**vrf** *vid*] **bsr-candidate**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
interface-type interface-number	Interface type and number
hash-mask-length	(Optional) HASK mask length configured for electing the RP in the range from 0 to 32, The default is 10.
priority-value	(Optional) Priority configured for the candidate BSR in the range from 0 to 255. The default is 64.

Defaults No C-BSR is configured by default.

Command Mode Global configuration mode

Usage Guide A PIM-SM domain must contain a unique BootStrap Router (BSR). BSR is responsible for collect and issue RP information. A unique recognized BSR is elected among multiple candidate BSRs through the bootstrap packet. Before BSR information is available, C-BSRs consider them to be the BSR, and regularly send bootstrap packets using the multicast address 224.0.0.13 in the PIM-SM domain. This packet contains the address and priority of the BSR.
This command allows the device to send a bootstrap message to all the PIM neighbors using the assigned BSR address. Each neighbor compares the original BSR address with the address in the received bootstrap message. If the IP address of the received address is equal to or larger than the original address, each neighbor saves this received address as the BSR address. Otherwise, they will discard this message.
The current device considers itself to be BSR until it receives a bootstrap message from another candidate BSR and is notified that it has a higher priority value (or the same priority value, but with a larger IP address).

Configuration Examples The following example configures the C-BSR.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim bsr-candidate g 0/3 30 192
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.9 ip pim dr-priority

Use this command to set the DR priority.

Use the **no** or **default** form of this command to restore the default setting.

ip pim dr-priority *priority-value*

no ip pim dr-priority

default ip pim dr-priority

Parameter Description

Parameter	Description
priority-value	The larger the value, the higher the priority is. The range is from 0 to 4,294,967,294.

Defaults The default is 1.

Command Mode Interface configuration mode

Usage Guide To select a DR:

If the priority parameter of the Hello message is set for the devices in a LAN, the one of the highest priority is elected to be the DR. If several devices have the same priority, the one of the largest IP address is elected to be the DR.

If the priority parameter of the Hello message is not set for the devices in a LAN, the one of the largest IP address is elected to be the DR.

Configuration Examples The following example sets the DR priority.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim dr-priority 10000
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.10 ip pim ignore-rp-set-priority

Use this command to ignore the RP priority.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **ignore-rp-set-priority**

no ip pim [**vrf** *vid*] **ignore-rp-set-priority**

default ip pim [**vrf** *vid*] **ignore-rp-set-priority**

Parameter Description	Parameter	Description
	vrf *vid*	Specifies a VRF.

Defaults By default, the C-RP with higher priority is selected.

Command Mode Global configuration mode

Usage Guide This command is used to ignore the priority of the RP.
When the device has several VRFs, you can configure different VRF by using the command with *vrf.*

Configuration Examples The following example ignores the RP priority .

```
Orion_B54Q(config)# ip pim ignore-rp-set-priority
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

6.11 ip pim jp-timer

Use this command to set the interval to send the join/prune message.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **jp-timer** *seconds*
no ip pim [**vrf** *vid*] **jp-timer**
default ip pim [**vrf** *vid*] **jp-timer**

Parameter Description	Parameter	Description
	vrf *vid*	Specifies a VRF.
	seconds	Interval to send the join/prune message in the range from 1 to 65535 in the unit of seconds

Defaults The default is 60 seconds.

Command Mode Global configuration mode

Usage Guide This command is used to set the interval to send the Join/Prune message.

Configuration Examples The following example sets the interval to send the Join/Prune message to 50 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim jp-timer 50
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.12 ip pim neighbor-filter

Use this command to confine the neighbor address range.
Use the **no** or **default** form of this command to restore the default setting.
ip pim neighbor-filter *access_list*
no ip pim neighbor-filter *access_list*
default ip pim neighbor-filter *access_list*

Parameter Description

Parameter	Description
access_list	Access control list supporting numerical ACL in the range 1 to 99 and name ACL

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide Neighbor filtering can enhance the security of a PIM-enabled network and provide neighbor restriction. As long as a neighbor is denied by the access list, PIM-SM will not establish the peering relationship with this neighbor or terminate the established peering relationship with this neighbor.

Configuration Examples The following example blocks the neighbor address 192.168.1.5..

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim neighbor-filter 14
Orion_B54Q(config-if)# exit
Orion_B54Q(config)# access-list 14 deny 192.168.1.5 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.13 ip pim neighbor-tracking

Use this command to disable join restraint on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip pim neighbor-tracking
no ip pim neighbor-tracking
default ip pim neighbor-tracking

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Interface configuration mode

Usage Guide Use this command to disable join restraint on the interface. With join constraint enabled, the interface is constrained not to send its Join message to the upstream neighbor when it receives the Join message that its neighbor sends to the upstream neighbor. On the other hand, with join constrain disabled, the interface will send its Join message to the upstream neighbor when it receives the Join message that its neighbor sends to the upstream neighbor. This function allows upstream routers to track how many receivers in downstream in accord with all received Join messages.

Configuration Examples The following example disables join restraint on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim neighbor-tracking
```

Related Commands

Command	Description
ip pim propagation-delay	N/A

Platform Description N/A

6.14 ip pim override-interval

Use this command to set the override-interval on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip pim override-interval *milliseconds*
no ip pim override-interval
default ip pim override-interval

Parameter Description

Parameter	Description
interval-milliseconds	In the range from 1 to 65535 in the unit of milliseconds

Defaults The default is 2500 milliseconds.

Command Mode Interface configuration mode

Usage Guide Use this command to set the override-interval for the interface.

⚠ Change of propagation delay or prune delay will influence the override interval of Join/prune message. As specified in the protocol, the override interval of Join/prune message must be less than its hold time or otherwise this will cause temporary interruption.

Configuration Examples The following example sets the override-interval as 3000 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ip pim override-interval 3000
```

Related Commands

Command	Description
ip pim propagation-delay	N/A

Platform Description N/A

6.15 ip pim probe-interval

Use this command to set the register probe interval.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **probe-interval** *seconds*
no ip pim [**vrf** *vid*] **probe-interval**
default ip pim [**vrf** *vid*] **probe-interval**

Parameter Description

Parameter	Description
interval-seconds	In the range from 1 to 65535 seconds

Defaults The default is 5 seconds.

Command Mode Global configuration mode

Usage Guide Use this command to set the registration probe time. The DR can send the null registration message

to the RP in a period before the registration suppression time expires. This period is called probe time of null registration packet.

- The probe time must be less than half of registration suppression time. Furthermore, 3* registration suppression time plus registration probe time should be no more than 65535s or otherwise the system triggers an alarm.

Configuration Examples

The following example sets the probe time to 6 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim probe-interval 6
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

6.16 ip pim propagation-delay

Use this command to set the propagation-delay on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip pim propagation-delay *milliseconds*
no ip pim propagation-delay
default ip pim propagation-delay

Parameter Description

Parameter	Description
interval-milliseconds	In the range from 1 to 32765 milliseconds

Defaults

The default is 500 milliseconds.

Command Mode

Interface configuration mode

Usage Guide

Use this command to set the propagation-delay for the interface.

- Change of propagation delay or prune delay will influence the override interval of Join/prune message. As specified in the protocol, the override interval of Join/prune message must be less than its hold time or otherwise this will cause temporary interruption.

Configuration Examples

The following example sets the propagation delay to 600 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ip pim propagation-delay 600
```

Related Commands	Command	Description
	ip pim override-interval	N/A
	Ip pim neighbor-tracking	N/A

Platform Description N/A

6.17 ip pim query-interval

Use this command to set the interval to send the hello packets.
Use the **no** or **default** form of this command to restore the default setting.
ip pim query-interval *seconds*
no ip pim query-interval
default ip pim query-interval

Parameter Description	Parameter	Description
	interval-seconds	Interval to send the Hello message, in the range from 1 to 65535 in the unit of seconds.

Defaults The default is 30 seconds.

Command Mode Interface configuration mode

Usage Guide Upon updating the interval to send the Hello message, the time of holding the Hello message is updated by the following principle: The hold time is updated to be 3.5 times the transmission interval. If the transmission interval*3.5 is more than 65535, the hold time is updated to 18752.

Configuration Examples The following example sets the interval to send the hello packets to 123 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ip pim query-interval 123
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

6.18 ip pim register-decapsulate-forward

Use this command to enable the RP to decapsulate the register packets and forward the multicast packets.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **register-decapsulate-forward**
no ip pim [**vrf** *vid*] **register-decapsulate-forward**
default ip pim [vrf vid] register-decapsulate-forward

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide Use this command to implement the decapsulate of the pim sm registration packets with the multicast data packets received on the candidate RP and forward the multicast data packets.
As the decapsulate and forward are performed by the software, it is not recommended to configure this command in the case that many registration packets need to be decapsulated and forwarded, which may cause the CPU busy with this function configured.

Configuration Examples The following example enables the RP to decapsulate the register packets and forwards the multicast packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim register-decapsulate-forward
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.19 ip pim register-checksum-wholepkt

Use this command to calculate the checksum of the whole register packet.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **register-checksum-wholepkt** [**group-list** *access-list*]
no ip pim [**vrf** *vid*] **register-checksum-wholepkt** [**group-list** *access-list*]
default ip pim [**vrf** *vid*] **register-checksum-wholepkt** [**group-list** *access-list*]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
access-list	Access-list: access control list supporting numerical ACL in the range from100 to 199 and from1300 to 1999 and name ACL. Group-list access-list :all multicast packets use this configuration by default

Defaults By default, the checksum of register messages calculates the head of PIM message and register message rather than the whole PIM message

Command Mode Global configuration mode

Usage Guide Some vendors calculate checksum based on the overall registration packets. Orion_B54Q Networks introduces this function for the compatibility with devices of other vendors.

Configuration Examples The following example calculates the checksum of the whole register packet..

```
Orion_B54Q# configure terminal
Orion_B54Q(config)#ip pim register-checksum-wholepkt group-list 99
Orion_B54Q(config)# access-list 99  permit 225.1.1.1 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.20 ip pim register-rate-limit

Use this command to limit the rate of register packets. Use the **no** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **register-rate-limit** *rate*

no ip pim [**vrf** *vid*] **register-rate-limit**

default ip pim [vrf vid] register-rate-limit

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
rate	Maximum number of register packets that can be sent per second, in the range from 1 to 65535

Defaults By default, there is no rate limitation on register messages.

Command Mode

Usage Guide This command is used to configure speed of transmitting register packet in each (S, G) status, not the speed of transmitting register packets in the system. Using this command will decrease the load of source DR and RP. The register packets can be transmitted at the speed within the limit.

Configuration Examples The following example limits the rate of register packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim register-rate-limit 3000
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.21 ip pim register-rp-reachability

Use this command to check RP reachability before sending register packets**.**
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **register-rp-reachability**
no ip pim [**vrf** *vid*] **register-rp-reachability**
default ip pim [**vrf** *vid*] **register-rp-reachability**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults By default, the RP reachability is not checked before sending register packets.

Command Mode Global configuration mode

Usage Guide This command is used to check the RP reachability before sending register packets.. If not, register packets are not transmitted.

Configuration Examples The following example checks the RP reachability before sending register packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim register-rp-reachability
```

Related Commands

Command	Description
N/A	N/A

Platform Description

6.22 ip pim register-source

Use this command to specify the source IP address of the register packets.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **register-source** { *local_address* | *interface-type interface-number* }

no ip pim [**vrf** *vid*] **register-source**

default ip pim [**vrf** *vid*] **register-source**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
interface-type interface-number	Interface whose IP address is used as the source IP address of register packets
local_address	Specifies the source IP address of the register packet.

Defaults By default, the source IP address of register packets is the IP address of the DR interface connecting the multicast source.

Command Mode Global configuration mode

Usage Guide This command is used to configure the source IP address of register messages.

The source IP address must be reachable. When RP receives the register packet, it transmits Register-Stop packet, using its source IP address as the destination IP address of the Register-Stop packet.

⚠ It is not necessary to enable the PIM.

Configuration Examples The following example specifies the source IP address of the register packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim register-source 192.168.195.80
Orion_B54Q(config)# ip pim register-source g 0/3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.23 ip pim register-suppression

Use this command to set the register suppression time.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **register-suppression** *seconds*

no ip pim [**vrf** *vid*] **register-suppression**

default ip pim [**vrf** *vid*] **register-suppression**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
suppression	Suppression time in the range from 1 to 65535 in the unit of seconds.

Defaults The default is 60 seconds.

Command Mode Global configuration mode

Usage Guide Executing this command on the DR will change the register packet suppression time configured. if the **ip pim rp-register-kat** command is not configured, executing this command on RP will modify the period of RP keepalive.

Configuration Examples The following example sets the register suppression time to 100 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim register-suppression 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.24 ip pim rp-address

Use this command to configure the static RP.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **rp-address** *rp-address* [*access_list*]

no ip pim [**vrf** *vid*] **rp-address** *rp-address* [*access_list*]

default ip pim [vrf vid] rp-address rp-address [access_list]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

rp-address	IP address of RP
access_list	Access control list supporting numerical ACL in the range 1 to 99 and 1300 to 1999 and name ACL. All multicast groups are supported by default.

Defaults No IP address is configured for the static RP by default.

Command Mode Global configuration mode

Usage Guide This system supports the configuration of multicast static RP, as well as the configuration of static RP and BSR mechanisms at the same time. When you use this command, note that:
If both the BSR mechanism and the static RP configuration take effect, the dynamic configuration takes precedence.
You can configure multiple multicast groups (using ACL) or all multicast groups (not using ACL) for the static RP. But a static RP can be configured only once.
If there are more than one static RP in a multicast group, the one of the highest IP address is used.
Only the addresses permitted by ACL are valid multicast groups. By default, all the multicast groups 224/4 are permitted.
After configuration is performed, the static RP's source IP address is inserted to the group range-based static RP group tree structure. Each group range-based static multicast group maintains the chain list structure of a static RP group. This chain list is sorted in descending order of IP address. When you select a RP from a static RP group, the first entry, namely the one with the largest IP address, will be selected first.
Deleting a static IP address also deletes this address from all the existing static RP groups and selects one from in the existing RP group tree structure as the RP address.

Configuration Examples The following example specifies the source IPv6 address of the register packet..

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim rp-address 210.34.0.55 4
Orion_B54Q(config)# access-list 4 permit 255.1.1.1 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.25 ip pim rp-candidate

Use this command to configure the C-RP.
Use the **no** or **default** form of this command to restore the default setting.
ip pim rp-candidate *interface-type interface-number* [**priority** *priority-value*] [**interval** *seconds*] [

group-list *access_list*]
no ip pim rp-candidate [*interface-type interface-number*]
default ip pim [**vrf** *vrf-name*] **rp-candidate** [**interface-type** *interface-number*]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
interface-type interface-number	Interface type and interface number
priority-value	(Optional) Priority in the range 0 to 255, 192 by default
-seconds	(Optional) Interval in the range 0 to 16383 seconds, 60s by default
access_list	(Optional) Numerical ACL in the range 1 to 99 or name ACL. By default, all multicast groups are permitted.

Defaults No C-RP is configured by default.

Command Mode Global configuration mode

Usage Guide In the PIM-SM protocol, the shared tree RPT created by the multicast routing uses the Rendezvous Point (RP) as the root node. RP is elected by the candidate RPs. After BSR is elected, all C-RPs sends C-RP messages in the unicast form to BSR regularly, and BSR spreads the messages throughout the PIM domain.
To specify an interface as the candidate RP of a specific group, execute this command with ACL. Note that the group range is calculated only based on the permit rule, not the deny rule.

Configuration Examples The following example configures the C-RP.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim rp-candidate g 0/3 priority 200 group-list 3
interval 70
Orion_B54Q(config)# access-list 3 permit 255.1.1.1 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.26 ip pim rp-register-kat

Use this command to set the KAT interval on the RP.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **rp-register-kat** *seconds*

no ip pim [**vrf** *vid*] **rp-register-kat**
default ip pim [**vrf** *vid*] **rp-register-kat**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
seconds	KAT timer time in the range from 1 to 65525 in the unit of seconds

Defaults The default is 210 seconds.

Command Mode Global configuration mode

Usage Guide This command is used to configure the KAT interval of RP.

Configuration Examples The following example sets the KAT interval on the RP to 250 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim rp-register-kat 250
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.27 ip pim sparse-mode

Use this command to enable PIM-SM on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip pim sparse-mode
no ip pim sparse-mode
default ip pim sparse-mode

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide This command is used to enable PIM-SM on the interface.

- You need to enable multicast routing forwarding in the global configuration mode before

enabling PIM-SM. Otherwise, multicast packets cannot be forwarded even though you enable PIM-SM.

- During the execution of this command, if the prompt "Failed to enable PIM-SM on <Interface Name>, resource temporarily unavailable, please try again" appears, re-execute this command.
- During the execution of this command, if the prompt "PIM-SM Configure failed! VIF limit exceeded in NSM!!!" appears; it indicates the allowed configured interface number exceeds the upper limit of the multicast interfaces. In this case, if you still need to enable PIM-SM on the interface, delete the unnecessary PIM-SM, PIM-DM or DVMRP interfaces.

Configuration Examples

The following example enables PIM-SM on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim sparse-mode
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

6.28 ip pim spt-threshold

Use this command to enable the SPT switching function.
Use the **no** or **default** form of this command to restore the default setting.
ip pim [**vrf** *vid*] **spt-threshold** [**group-list** *access-list*]
no ip pim [**vrf** *vid*] **spt-threshold** [**group-list** *access-list*]
default ip pim [**vrf** *vid*] **spt-threshold**[**group-list** *access-list*]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
access_list	(Optional) Numerical ACL in the range 1 to 99 and 1300 to 1999 or name ACL. By default, all multicast groups are permitted for SPT switching.

Defaults

This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to enable the RP tree-to-SPT tree switching function in a specific multicast group range (using **group-list**) or all multicast groups (not using **group-list**) .

Configuration Examples The following example enables the SPT switching function.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim spt-threshold
Orion_B54Q(config)# ip pim spt-threshold group-list 12
Orion_B54Q(config)# access-list 12 permit 225.1.1.1 0.0.0.255
```

Related Commands

Command	Description
access-list	N/A

Platform Description N/A

6.29 ip pim ssm

Use this command to enable SSM and set the SSM group address range.

Use the **no** or **default** form of this command to restore the default setting.

ip pim [**vrf** *vid*] **ssm** { **default** | **range** *access_list* }

no ip pim [**vrf** *vid*] **ssm**

default ip pim [**vrf** *vid*] **ssm**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
default	Multicast groups of 232/8
range *access_list*	Numerical ACL in the range 1 to 99 and 1300 to 1999 or name ACL.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command is used to enable PIM-SSM (or in some specific multicast groups).

Configuration Examples The following command enables SSM and sets the SSM group range to 232/8:

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ip pim ssm default
The following command sets the source-specific multicast with ACL 10.
Orion_B54Q(config)# ip pim ssm range 10
Orion_B54Q(config)# access-list 10 permit 232.0.0.1 0.0.0.255
```

Related Commands

Command	Description
N/A	N/A

Platform Description

6.30 ip pim triggered-hello-delay

Use this command to configure Triggered-Hello-Delay time on the interface.
Use the **no** or **default** form of this command to restore the default setting.
ip pim triggered-hello-delay *seconds*
no ip pim triggered-hello-delay
default ip pim triggered-hello-delay

Parameter Description

Parameter	Description
interval-seconds	In the range from 1 to 5 in the unit of seconds.

Defaults The default is 5 seconds.

Command Mode Interface configuration mode

Usage Guide Use this command to configure the triggered-hello-delay of the interface. When the interface starts or detects a new neighbor, it uses the trigger-hello-delay to generate random time, and then the interface sends the Hello message in random time.

Configuration Examples The following command sets the triggered-hello-delay to 3 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ip pim triggered-hello-delay 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.31 show debugging

Use this command to display the debugging status.
show debugging

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command is used to turn on debugging switch.

Configuration Examples The following example displays the debugging status.

```
Orion_B54Q # show debugging
PIM-SM Debugging status:
PIM packet debugging is on.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.32 show ip pim sparse-mode bsr-router

Use this command to display the BSR information

show ip pim sparse-mode [**vrf** *vid*] **bsr-router**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command is used to display BSR information.

Configuration Examples The following example displays BSR information.

```
Orion_B54Q# show ip pim sparse-mode bsr-router
PIMv2 Bootstrap information
This system is the Bootstrap Router (BSR)
BSR address: 192.168.127.1
Uptime:      01d23h14m, BSR Priority: 64, Hash mask length: 10
Next bootstrap message in 00:00:42
Role: Candidate BSR   Priority: 64, Hash mask length: 10
State: Elected BSR
Candidate RP: 30.30.100.200(GigabitEthernet 0/3)
```

```
Advertisement interval 60 seconds
Next Cand_RP_advertisement in 00:00:32
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.33 show ip pim sparse-mode interface

Use this command to display PIM-SM interface information.

show ip pim sparse-mode [**vrf** *vid*] **interface** [*interface-type interface-number*] [**detail**]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
interface-type interface-number	(Optional) Interface name. This command takes effect for all interfaces by default.
detail	(Optional) Displays the details of an interface.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command displays the PIM-SM information on the interface.

Configuration Examples The following example displays the PIM-SM information on the interface.

```
Orion_B54Q #show ip pim sparse-mode interface detail
GigabitEthernet 0/3 (vif 2):
  Address 30.30.100.200, DR 30.30.100.200
  Hello period 30 seconds, Next Hello in 13 seconds
  Triggered Hello period 5 seconds
  Neighbors:
   30.30.100.1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.34 show ip pim sparse-mode local-members

Use this command to display the local IGMP information on the PIM-SM interface.

show ip pim sparse-mode [**vrf** *vid*] **local-members** [*interface-type interface-number*]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
interface-type interface-number	(Optional) Interface name. This command takes effect for all interfaces by default.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command displays the local IGMP information on the PIM-SM interface.

Configuration Examples The following example displays the local IGMP information on the PIM-SM interface.

```
Orion_B54Q (config-if)#sh ip pim sparse-mode local-members
PIM Local membership information
GigabitEthernet 0/3:
(*, 225.1.1.1) : Include
Loopback 1:
GigabitEthernet 0/5:
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.35 show ip pim sparse-mode mroute

Use this command to display the PIM-SM routing information.

show ip pim sparse-mode [**vrf** *vid*] **mroute** [*group-or-source-address* [*group-or-source-address*]] [**proxy**]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
group-or-source-address	Group IP address or source IP address. Two addresses cannot both be the group addresses or the source

	addresses.
proxy	RPF vector information.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command is used to display routing information. Only one group IP address, one source IP address or one group IP address-source IP address pair can be configured at a time. You can also specify no group IP address or source IP address.

Configuration Examples The following example displays the PIM-SM routing information.

```
Orion_B54Q#show ip pim sparse-mode mroute
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.36 show ip pim sparse-mode neighbor

Use this command to display the neighbor information.

show ip pim sparse-mode [**vrf** *vid*] **neighbor** [**detail**]

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
detail	(Optional) Displays the details of an interface.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command displays the information on neighbors.

Configuration Examples The following example displays the neighbor information.

```
Orion_B54Q# show ip pim sparse-mode neighbor detail
Nbr 5.5.5.3 (VLAN 1)
  Expire in 81 seconds
```

Related Commands

Command	Description

N/A	

Platform Description N/A

6.37 show ip pim sparse-mode nexthop

Use this command to display the next hop information, including the interface ID, address and metric.

show ip pim sparse-mode [**vrf** *vid*] **nexthop**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command displays the information on the next hop, including interface ID, IP address and metric.

Configuration Examples N/A

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.38 show ip pim sparse-mode rp-hash

Use this command to display the RP information corresponding to the group address.

show ip pim sparse-mode [**vrf** *vid*] **rp-hash** *group-address*

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
group-address	Group address to be resolved

Defaults N/A

Command Mode

Usage Guide This command displays the RP information corresponding to the group address.

Configuration Examples The following example displays the RP information corresponding to the group address..

```
Orion_B54Q# show ip pim sparse-mode rp-hash 255.1.1.1
RP: 30.30.100.1
Info source: 30.30.100.1, via bootstrap
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.39 show ip pim sparse-mode rp mapping

Use this command to display the information on all RPs and the multicast groups they serve.

show ip pim sparse-mode [**vrf** *vid*] **rp mapping**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.
mapping	All group and RP information

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command displays the information on all RPs and the multicast groups they serve.

Configuration Examples The following example displays the information on all RPs and the multicast groups they serve..

```
Orion_B54Q# show ip pim sparse-mode rp mapping
PIM Group-to-RP Mappings
Group(s): 224.0.0.0/4
RP: 30.30.200.1
Info source: 30.30.200.1, via bootstrap, priority 192
Uptime: 00:00:51, expires: 00:01:39
RP: 30.30.100.1
Info source: 30.30.200.1, via bootstrap, priority 192
Uptime: 00:19:14, expires: 00:01:38
Group(s): 224.0.0.0/4, Static
```

```
RP: 100.100.100.100
Uptime: 00:45:35
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.40 show ip pim sparse-mode track

Use this command to display the number of sent and received PIM packets during the period from the beginning of the statistics till now.

show ip pim sparse-mode [**vrf** *vid*] **track**

Parameter Description

Parameter	Description
vrf *vid*	Specifies a VRF.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command is used to display the number of sent and received PIM packets during the period from the beginning of the statistics till now.. When the system starts up, it sets the start time of the statistics. The start time of the statistics is reconfigured and the PIM packet counter is cleared on calling the **clear ip pim sparse-mode track** every time.

Configuration Examples The following example displays the number of sent and received PIM packets during the period from the beginning of the statistics till now.

```
Orion_B54Q # show ip pim sparse-mode track
                PIM packet counters track
Elapsed time since counters cleared: 00:04:03
                            received    sent
Valid PIMSM packets:     0             8
Hello:                      0             8
Join-Prune:                 0             0
Register:                   0             0
Register-Stop:              0             0
Assert:                     0             0
BSM:                        0             0
C-RP-ADV:                   0             0
```

```
PIMDM-Graft:                0
PIMDM-Graft-Ack :       0
PIMDM-State-Refresh:    0
Unknown PIM Type:       0
Errors:
Malformed packets:                      0
Bad checksums:                              0
Send errors:                                0
Packets received with unknown PIM version:     0
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7 PIM-SMv6 Commands

7.1 clear ipv6 mroute

Use this command to clear multicast routing entries.

clear ipv6 mroute {* | *ipv6_group_address* | *ipv6_group_address ipv6_source_address* }

Parameter Description

Parameter	Description
*	Deletes all the multicast routing entries.
ipv6_group_address	Deletes the multicast routing entries of the specific group.
ipv6_group_address source_address	Deletes the multicast routing entries of the specific group and source IPv6 address.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Multicast routing entries can be deleted manually.

Configuration Examples The following example clears the multicast routing entries.

```
Orion_B54Q# clear ipv6 mroute *
Orion_B54Q# clear ipv6 mroute ff66::6666
Orion_B54Q# clear ipv6 mroute ff66::6666 3333::3333
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.2 clear ipv6 mroute statistics

Use this command to delete the statistics of the multicast routing entries.

clear ipv6 mroute statistics {* | *ipv6_group_address[ipv6_source_address*] }

Parameter Description

Parameter	Description
*	Deletes the statistics of all multicast routing entries.
ipv6_group_address	Deletes the statistics of the multicast routing entries of the specific group.

ipv6_group_address *ipv6_source_address*	Deletes the statistics of the multicast routing entries of the specific group and source IPv6 address.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide The statistics of multicast routing entries can be deleted manually.

Configuration Examples The following example deletes the statistics of the multicast routing entries.

```
Orion_B54Q# clear ipv6 mroute statistics *
Orion_B54Q# clear ipv6 mroute statistics ff66::6666
Orion_B54Q# clear ipv6 mroute statistics ff66::6666 3333::3333
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.3 clear ipv6 pim sparse-mode bsr rp-set

Use this command to clears the RP information learnt dynamically.

clear ipv6 pim sparse-mode bsr rp-set *

Parameter Description

Parameter	Description
*	Clears all RP-SET.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide All the RP information learnt dynamically can be cleared manually.

Configuration Examples The following example clears the RP information learnt dynamically.

```
Orion_B54Q# clear ipv6 pim sparse-mode bsr rp-set *
```

Related Commands

Command	Description
N/A	N/A

Platform N/A

Description

7.4 clear ipv6 pim sparse-mode track

Use this command to reconfigure the start time of the statistics and clear the PIMv6 packet counter.
clear ipv6 pim sparse-mode track

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to reconfigure the start time of the statistics and clear the PIMv6 packet counter.

Configuration Examples The following example clears the PIMv6 packet counter.

```
Orion_B54Q# clear ipv6 pim sparse-mode track
```

Related Commands

Command	Description
show ipv6 pim sparse-mode track	N/A

Platform Description N/A

7.5 ipv6 pim accept-bsr list

Use this command to confine the BSR address range. Use the **no** or **default** form this command to restore the default setting.
ipv6 pim accept-bsrr list *ipv6_access-list*
no ipv6 pim accept-bsr
default ipv6 pim accept-bsr

Parameter Description

Parameter	Description
list *ipv6_access-list*	IPv6 standard name ACL

Defaults By default, the PIM-SMv6 router receives all external BSM packets.

Command Mode Global configuration mode

Usage Guide Use this command to confine the range of the legal BSR.

Configuration Examples The following example confines the BSR address range.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim accept-bsr list bsr-list
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.6 ipv6 pim accept-crp list

Use this command to confine the C-RP address range and the multicast group address range it serves. Use the no or default form of this command to restore the default setting,
ipv6 pim accept-crp list ipv6_access-list
no ipv6 pim accept-crp
default ipv6 pim accept-crp-with-null-group

Parameter Description

Parameter	Description
list *ipv6_access-list*	Extended IPv6 ACL

Defaults No address is filtered by default.

Command Mode Global configuration mode

Usage Guide With this command configured on the candidate BSR, when this BSR becomes the elected BSR, it is able to limit the address range of the legal C-RP and the multicast group range it serves.

Configuration Examples The following example confines the C-RP address range and the multicast group address range it serves..

```
Orion_B54Q (config)# comfigure terminal
Orion_B54Q (config)# ipv6 pim accept-crp list crp-list
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.7 ipv6 pim accept-crp-with-null-group

Use this command to receive the C-RP-ADV packets whose prefix-count is 0. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim accept-crp-with-null-group

no ipv6 pim accept-crp-with-null-group

default ipv6 pim accept-crp

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide With this command configured on the candidate BSR, when this BSR becomes the elected BSR, it is able to receive the C-RP-ADV packets whose prefix-count is 0, and considers this C-RP supports all groups.

Configuration Examples The following example receives the C-RP-ADV packets whose prefix-count is 0.

```
Orion_B54Q (config)# configure terminal
Orion_B54Q (config)# ipv6 pim accept-crp-with-null-group
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.8 ipv6 pim accept-register list

Use this command to confine the address range of the (S,G) entry of the register packets. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim accept-register { **list** *ipv6_access-list* [**route-map** *map-name*] | **route-map** *map-name* [**list** *ipv6_access-list*] }

no ipv6 pim accept-register

default ipv6 pim accept-register

Parameter Description

Parameter	Description
list *ipv6_access-list*	Access control list supporting name ACL

route-map *map-name*	Defines the routing map rule

Defaults The range is not confined by default.

Command Mode Global configuration mode

Usage Guide This command is used to confine the source IPv6 address of register messages on RP. If the unauthorized register source is received, the RP will return the Register-Stop message immediately.

Configuration Examples The following example confines the source IPv6 address of register packets on the RP.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim accept-register list register-access-list
Orion_B54Q(config)# ipv6 access-list register-access-list
The following example denies the register message of the specified source
fe80::2d0:f8ff:fe22:33ad
Orion_B54Q(config-ipv6-acl)# deny ipv6 fe80::2d0:f8ff:fe22:33ad/128 any
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.9 ipv6 pim bsr-border

Use this command to configure the BSR border. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim bsr-border

no ipv6 pim bsr-border

default ipv6 pim bsr-border

Parameter Description

Parameter	Description
N/A	N/A

Defaults No BSR border is configured by default.

Command Mode Interface configuration mode

Usage Guide To restrain BSM flooding, configure BSR border on the interface so that the interface drops BSM packets upon receiving them and the BSM packets are not forwarded from this interface.

Configuratio The following example sets the BSR border on the interface *g 0/3*.

n Examples

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim bsr-border
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.10 ipv6 pim bsr-candidate

Use this command to configure the C-BSR. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim bsr-candidate *interface-type interface-number* [*hash-mask-length* [*priority-value*]]

no ipv6 pim bsr-candidate

default ipv6 pim bsr-candidate

Parameter Description

Parameter	Description
interface-type interface-number	Interface type and number.
hash-mask-length	(Optional) HASK mask length configured for electing the RP in the range from 0 to 128. The default is 126.
priority-value	(Optional) Priority configured for the candidate BSR in the range from 0 to 255. The default is 64.

Defaults No C-BSR is configured by default.

Command Mode Global configuration mode

Usage Guide A PIM-SMv6 domain must contain a unique BootStrap Router (BSR). BSR is responsible for collect and issue RP information. A unique recognized BSR is elected among multiple candidate BSRs through the bootstrap packet. Before BSR information is available, C-BSRs consider them to be the BSR, and regularly send bootstrap packets using the multicast address 224.0.0.13 in the PIM-SM domain. This packet contains the address and priority of the BSR.

This command allows the device to send a bootstrap message to all the PIM neighbors using the assigned BSR address. Each neighbor compares the original BSR address with the address in the received bootstrap message. If the IPv6 address of the received address is equal to or larger than the original address, each neighbor saves this received address as the BSR address. Otherwise, they will discard this message.

The current device considers itself to be BSR until it receives a bootstrap message from another

candidate BSR and is notified that it has a higher priority value (or the same priority value, but with a larger IPv6 address).

Configuration Examples The following example s configures the C-BSR.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim bsr-candidate g 0/3 30 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.11 ipv6 pim dr-priority

Use this command to configure the DR priority, Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim dr-priority *priority-value*
no ipv6 pim dr-priority
default ipv6 pim dr-priority

Parameter Description

Parameter	Description
priority-value	The larger the value, the higher the priority is. The range is from 0 to 4294967294. The default is 1.

Defaults The default is 1.

Command Mode Interface configuration mode

Usage Guide To select a DR:

- If the priority parameter of the Hello message is set for the devices in a LAN, the one of the highest priority is elected to be the DR. If several devices has the same priority, the one of the largest IP address is elected to be the DR.
- If the priority parameter of the Hello message is not set for the devices in a LAN, the one of the largest IP address is elected to be the DR.

Configuration Examples The following example configures the DR priority.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim dr-priority 11234
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.12 ipv6 pim ignore-rp-set-priority

Use this command to ignore the RP priority. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim ignore-rp-set-priority

no ipv6 pim ignore-rp-set-priority

default ipv6 pim ignore-rp-set-priority

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, the C-RP with higher priority is selected.

Command Mode Global configuration mode

Usage Guide This command is used to ignore the priority of the RP corresponding to the multicast group.

Configuration Examples The following example ignores the RP priority.

```
Orion_B54Q# configure terminal
Orion_B54Q(config-if)# ipv6 pim ignore-rp-set-priority
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.13 ipv6 pim jp-timer

Use this command to set the interval to send the join/prune message. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim jp-timer *seconds*

no ipv6 pim jp-timer

default ipv6 pim jp-timer

Parameter Description

Parameter	Description
seconds	Interval to send the join/prune message in the range from 1 to 65535 in the unit of seconds

Defaults The default is 60.

Command Mode Global configuration mode

Usage Guide This command is used to set the interval to send the Join/Prune message.

Configuration Examples The following example sets the interval to send the Join/Prune message to 100 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim jp-timer 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.14 ipv6 pim neighbor-filter

Use this command to confine the neighbor address range. Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim neighbor-filter *ipv6_access-list*
no ipv6 pim neighbor-filter *ipv6_access-list*
default ipv6 pim neighbor-filter *ipv6_access-list*

Parameter Description

Parameter	Description
ipv6_access_list	Access control list supporting name ACL

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide Neighbor filtering can enhance the security of a PIM-enabled network and provide neighbor restriction. As long as a neighbor is denied by the access list, PIM-SM will not establish the peering relationship with this neighbor or terminate the established peering relationship with this neighbor.

Configuration Examples The following example block the neighbor address fe80::2d0:f8ff:fe22:33ad/128.

```
Orion_B54Q# configure terminal
```

```
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim neighbor-filter acl
Orion_B54Q(config-if)# exit
Orion_B54Q(config-if)# ipv6 access-list acl
The following example denies the neighbor fe80::2d0:f8ff:fe22:33ad
Orion_B54Q(config-ipv6-acl)#  deny ipv6 fe80::2d0:f8ff:fe22:33ad/128 any
```

Related Commands

Command	Description
ipv6_access-list	N/A

Platform Description N/A

7.15 ipv6 pim neighbor-tracking

Use this command to disable join restraint on the interface. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim neighbor-tracking

no ipv6 pim neighbor-tracking

default ipv6 pim neighbor-tracking

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Interface configuration mode

Usage Guide Use this command to disable join restraint on the interface. With join constraint enabled, the interface is constrained not to send its Join message to the upstream neighbor when it receives the Join message that its neighbor sends to the upstream neighbor. On the other hand, with join constrain disabled, the interface will send its Join message to the upstream neighbor when it receives the Join message that its neighbor sends to the upstream neighbor. This function allows upstream routers to track how many receivers in downstream in accord with all received Join messages.

Configuration Examples The following example disables join restraint on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim neighbor-tracking
```

Related

Command	Description

Commands		
	ipv6 pim propagation-delay	N/A

Platform Description N/A

7.16 ipv6 pim override-interval

Use this command to set the override-interval on the interface, Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim override-interval *milliseconds*

no ipv6 pim override-interval

default ipv6 pim override-interval

Parameter Description

Parameter	Description
interval-milliseconds	In the range 1 to 65535 in the unit of milliseconds

Defaults The default is 2500 milliseconds.

Command Mode Interface configuration mode

Usage Guide Use this command to set the override-interval for the interface.

⚠ Change of propagation delay or prune delay will influence the override interval of Join/prune message. As specified in the protocol, the override interval of Join/prune message must be less than its hold time or otherwise this will cause temporary interruption.

Configuration Examples The following example sets the override-interval to 3000 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ipv6 pim override-interval 3000
```

Related Commands

Command	Description
ipv6 pim propagation-delay	N/A

Platform Description N/A

7.17 ipv6 pim probe-interval

Use this command to set the register probe interval. Use the **no** or **default** form of this command to

restore the default setting.

ipv6 pim probe-interval *seconds*

no ipv6 pim probe-interval

default ipv6 pim probe-interval

Parameter Description

Parameter	Description
seconds	In the range from 1 to 65535 in the unit of seconds

Defaults The default is 5 seconds.

Command Mode Global configuration mode

Usage Guide Use this command to set the registration probe time. The DR can send the null registration message to the RP in a period before the registration suppression time expires. This period is called probe time of null registration packet.

- The probe time must be less than half of registration suppression time. Furthermore, 3* registration suppression time plus registration probe time should be no more than 65535s or otherwise the system triggers an alarm.

Configuration Examples The following example sets the probe time as 6 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim probe-interval 6
```

Related Commands

Command	Description
ipv6 pim register-suppression	N/A

Platform Description N/A

7.18 ipv6 pim propagation-delay

Use this command to set the propagation-delay on the interface. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim propagation-delay *milliseconds*

no ipv6 pim propagation-delay

default ipv6 pim propagation-delay

Parameter Description

Parameter	Description
interval-milliseconds	In the range from 1 to 32765 in the unit of milliseconds

Defaults The default is 500 milliseconds.

Command Mode Interface configuration mode

Usage Guide Use this command to set the propagation-delay for the interface.

- Change of propagation delay or prune delay will influence the override interval of Join/prune message. As specified in the protocol, the override interval of Join/prune message must be less than its hold time or otherwise this will cause temporary interruption.

Configuration Examples The following example sets the propagation delay to 600 milliseconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ipv6 pim propagation-delay 600
```

Related Commands

Command	Description
ipv6 pim override-interval	N/A
ipv6 pim neighbor-tracking	N/A

Platform Description N/A

7.19 ipv6 pim query-interval

Use this command to set the interval to send the hellp packets. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim query-interval *seconds*

no ipv6 pim query-interval

default ipv6 pim query-interval

Parameter Description

Parameter	Description
seconds	Interval to send the Hello message in the range from 1 to 65535 in the unit of seconds

Defaults The default is 30.

Command Mode Interface configuration mode

Usage Guide Upon updating the interval to send the Hello message, the time of holding the Hello message is updated by the following principle: The hold time is updated to be 3.5 times the transmission interval. If the transmission interval*3.5 is more than 65535, the hold time is updated to 18725.

Configuration Examples The following example sets the interval to send the hello packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config)# ipv6 pim query-interval 60
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.20 ipv6 pim register-checksum-wholepkt

Use this command to calculate the checksum of the whole register packet. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim register-checksum-wholepkt [**group-list** *ipv6_access-list*]

no ipv6 pim register-checksum-wholepkt [**group-list** *ipv6_access-list*]

default ipv6 pim register-checksum-wholepkt [**group-list** *ipv6_access-list*]

Parameter Description

Parameter	Description
group-list ipv6_access-list	Access-list: access control list supporting name ACL. Group-list ipv6_access-list :all multicast packets use this configuration by default

Defaults By default, the checksum of register messages calculates the head of PIM message and register message rather than the whole PIM message.

Command Mode Global configuration mode

Usage Guide Some vendors calculate checksum based on the overall registration packets. Orion_B54Q Networks introduces this function for the compatibility with these vendors.

Configuration Examples The following example calculates the checksum of the whole register packet.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)#ipv6 pim register-checksum-wholepkt group-list
checksum-access-list
Orion_B54Q(config)# ipv6 access-list 99  checksum-access-list
Orion_B54Q(config-ipv6-acl)# permit ipv6 any ff66::6666/64
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.21 ipv6 pim register-rate-limit

Use this command to limit the rate of register packets. Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim register-rate-limit *rate*
no ipv6 pim register-rate-limit
default ipv6 pim register-rate-limit

Parameter Description

Parameter	Description
rate	Maximum number of register packets that can be sent per second, in the range from 1 to 65535.

Defaults By default, there is no rate limitation on register messages.

Command Mode Global configuration mode

Usage Guide This command is used to configure speed of transmitting register packet in each (S, G) status, not the speed of transmitting register packets in the system. Using this command will decrease the load of source DR and RP. The register packets can be transmitted at the speed within the limit.

Configuration Examples The following example limits the rate of register packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim register-rate-limit 3000
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.22 ipv6 pim register-rp-reachability

Use this command to check RP reachability before sending register packets**.** Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim register-rp-reachability
no ipv6 pim register-rp-reachability
default ipv6 pim register-rp-reachability

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, the RP reachability is not checked before sending register packets.

Command Mode Global configuration mode

Usage Guide This command is used to check the RP reachability before transmission. If not, register packets are not transmitted.

Configuration Examples The following example checks the RP reachability before sending register packets.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim register-rp-reachability
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.23 ipv6 pim register-source

Use this command to specify the source IPv6 address in the register packets. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim register-source { *ipv6_local_address* | *interface-type interface-number* }

no ipv6 pim register-source

default ipv6 pim register-source

Parameter Description

Parameter	Description
ipv6_local_address	Source IPv6 address of register packets
interface-type interface-number	Interface whose IPv6 address is used as the source IPv6 address of register packets

Defaults By default, the source IPv6 address of register packets is the IPv6 address of the DR interface connecting the multicast source.

Command Mode Global configuration mode

Usage Guide This command is used to configure the source IPv6 address of register messages.
The source IPv6 address must be reachable. When RP receives the register packet, it transmits

Register-Stop packet, using its source IPv6 address as the destination IPv6 address of the Register-Stop packet.

⚠ It is not necessary to enable the PIM-SMv6 on the associated interfaces.

Configuration Examples The following example configures the source IPv6 address of register messages.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim register-source 3333::3333
Orion_B54Q(config)# ipv6 pim register-source g 0/3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.24 ipv6 pim register-suppression

Use this command to set the register suppression time. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim register-suppression *seconds*

no ipv6 pim register-suppression

default ipv6 pim register-suppression

Parameter Description

Parameter	Description
suppression	Suppression time in the range from 1 to 65535 in the unit of seconds.

Defaults The default is 60 seconds.

Command Mode Global configuration mode

Usage Guide Executing this command on the DR will change the register packet suppression time configured. if the ipv6 pim rp-register-kat command is not configured, executing this command on RP will modify the period of RP keepalive.

Configuration Examples The following example sets the register packet suppression time.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim register-suppression 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.25 ipv6 pim rp-address

Use this command to configure the static RP. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim rp-address *ipv6_rp-address* [*ipv6_access_list*]

no ipv6 pim rp-address *ipv6_rp-address* [*ipv6_access-list*]

default ipv6 pim rp-address *ipv6_rp-address* [*ipv6_access-list*]

Parameter Description

Parameter	Description
ipv6_rp-address	IPv6 address of RP
ipv6_access_list	Access control list supporting name ACL

Defaults No IPv6 address is configured for the static RP by default.

Command Mode Global configuration mode

Usage Guide This system supports the configuration of multicast static RP, as well as the configuration of static RP and BSR mechanisms at the same time. When you use this command, note that:

- If both the BSR mechanism and the static RP configuration take effect, the dynamic configuration takes precedence.
- You can configure multiple multicast groups (using ACL) or all multicast groups (not using ACL) for the static RP. But a static RP can be configured only once.
- If there are more than one static RP in a multicast group, the one of the highest IPv6 address is used.
- Only the addresses permitted by ACL are valid multicast groups. By default, all the multicast groups 224/4 are permitted.
- After configuration is performed, the static RP's source IPv6 address is inserted to the group range-based static RP group tree structure. Each group range-based static multicast group maintains the chain list structure of a static RP group. This chain list is sorted in descending order of IPv6 address. When you select a RP from a static RP group, the first entry, namely the one with the largest IPv6 address, will be selected first.

Deleting a static IPv6 address also deletes this address from all the existing static RP groups and selects one from in the existing RP group tree structure as the RP address.

Configuration Examples The following example configures the RP static address.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim rp-address 3333::3333 acl
```

```
Orion_B54Q(config)# ipv6 pim rp-address 210.34.0.55 4
Orion_B54Q(config)# ipv6 access-list ac
Orion_B54Q(config)# permit ipv6 any ff66::6666/64
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.26 ipv6 pim rp-candidate

Use this command to configure the C-RP. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim rp-candidate *interface-type interface-number* [**priority** *priority-value*] [**interval** *interval-seconds*] [**group-list** *ipv6_access-list*]

no ipv6 pim rp-candidate [*interface-type interface-number*]

default ipv6 pim rp-candidate [*interface-type interface-number*]

Parameter Description

Parameter	Description
interface-type interface-number	Interface type and interface number
priority-value	(Optional) Priority in the range from 0 to 255, 192 by default
interval-seconds	(Optional) Interval in the range from 0 to 16383 in the unit of seconds, 60 by default
ipv6_access_list	(Optional) ACL name. By default, all multicast groups are permitted.

Defaults N/A

Command Mode Global configuration mode

Usage Guide In the PIM-SMv6 protocol, the shared tree RPT created by the multicast routing uses the Rendezvous Point (RP) as the root node. RP is elected by the candidate RPs. After BSR is elected, all C-RPs sends C-RP messages in the unicast form to BSR regularly, and BSR spreads the messages throughout the PIM domain.
To specify an interface as the candidate RP of a specific group, execute this command with ACL. Note that the group range is calculated only based on the permit rule, not the deny rule.

Configuratio The following example configures the RP candidate.

n Examples

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim rp-candidate g 0/3 priority 200 group-list
acl interval 40
Orion_B54Q(config)# ipv6 access-list acl
Orion_B54Q(config-ipv6-acl)# permit ipv6  any ff66::6666/64
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.27 ipv6 pim rp embedded

Use this command to enable the embedded RP function. Use the **no** or **default** form of this command to disable this function.

ipv6 pim rp embedded [**group-list** *ipv6_acl_name*]

no ipv6 pim rp embedded

default ipv6 pim rp embedded

Parameter Description

Parameter	Description
group-list ipv6_acl_name	Enables embedded RP for the IPv6 multicast address of specified embedded RP address.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command is used to enable the embedded RP function explicitly and to enable the embedded RP for the IPv6 multicast address of specified embedded RP address.

Configuration Examples The following example enables the embedded RP for the IPv6 multicast addresses of all embedded RP addresses.

```
Orion_B54Q(config)# ipv6 pim rp embedded
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.28 ipv6 pim rp-register-kat

Use this command to set the survival time of (S, G) entry created by the register packet on the RP. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim rp-register-kat *seconds*

no ipv6 pim rp-register-kat

default ipv6 pim rp-register-kat

Parameter Description

Parameter	Description
seconds	KAT timer time in the range from1 to 65525 in the unit of seconds.

Defaults The default is equal to the sum of register probe time and three times register suppression time.

Command Mode Global configuration mode

Usage Guide This command is used to configure the KAT interval of RP.

Configuration Examples The following example configures the KAT interval of RP.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# ipv6 pim rp-register-kat 250
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.29 ipv6 pim sparse-mode

Use this command to enable PIM-SMv6 on the interface. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim sparse-mode

no ipv6 pim sparse-mode

default ipv6 pim sparse-mode

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Interface configuration mode

Mode

Usage Guide This command is used to enable PIM-SMv6 on the interface.

- You need to enable multicast routing forwarding in the global configuration mode before enabling PIM-SMv6. Otherwise, multicast packets cannot be forwarded even though you enable PIM-SM.
- During the execution of this command, if the prompt "Failed to enable PIM-SMv6 on <Interface Name>, resource temporarily unavailable, please try again" appears, re-execute this command.
- During the execution of this command, if the prompt "PIM-SMv6 Configure failed! VIF limit exceeded in NSM!!!" appears, it indicates the allowed configured interface number exceeds the upper limit of the multicast interfaces. In this case, if you still need to enable PIM-SMv6 on the interface, delete the unnecessary PIM-SMv6,or PIM-DMv6 interfaces.
- If the interface is of tunnel-type, only 6Over4 configuration tunnel, 6Over GRE tunnel, 6Over4 configuration tunnel and 6Over6 GRE tunnel support the IPv6 multicasting at the moment. The multicasting can also be enabled on other tunnel interfaces which do not support the multicasting, but no error message will be displayed and no multicast packets will be received and forwarded.
- The multicast tunnel can only be built on the Ethernet interface, the nested tunnel and the multicast data Qos/ACL are not supported.

Configuration Examples The following example enables PIM-SMv6 on the interface.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim sparse-mode
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.30 ipv6 pim spt-threshold

Use this command to enable SPT switch. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim spt-threshold [**group-list** *ipv6_access-list*]

no ipv6 pim spt-threshold [**group-list** *ipv6_access-list*]

default ipv6 pim spt-threshold [**group-list** *ipv6_access-list*]

Parameter Description

Parameter	Description

ipv6_access_list	(Optional) supporting name ACL. By default, all multicast groups are permitted for SPT switching.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command is used to enable the RP tree-to-SPT tree switching function in a specific multicast group range (using group-list) or all multicast groups (not using group-list) .

Configuration Examples The following example enables the SPT switch.

```
Orion_B54Q(config)# ipv6 pim spt-threshold acl
Orion_B54Q(config)# ipv6 access-list acl
Orion_B54Q(config-ipv6-acl)# permit ipv6  fe80::2d0:f8ff:fe22:33ad /128
ff66::6666/64
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.31 ipv6 pim ssm

Use this command to enable SSM and set the SSM group address range. Use the **no** or **default** form of this command to restore the default setting.
ipv6 pim ssm { **default** | **range** *ipv6_access-list* }
no ipv6 pim ssm
default ipv6 pim ssm

Parameter Description

Parameter	Description
default	Group in the range of FF3x::/32
range *ipv6_access_list*	Supporting name ACL.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This command is used to enable PIM-SSMv6 (or in some specific multicast groups).

Configuration Examples The following example sets the source-specific multicast of the multicast group range acl.

```
Orion_B54Q# configure terminal
```

```
Orion_B54Q(config)# ipv6 pim ssm range acl
```

The following example uses SSM for the source address fe80::2d0:f8ff:fe22:33ad, group range of ff32::3333/64.

```
Orion_B54Q(config-ipv6-acl)# permit ipv6  fe80::2d0:f8ff:fe22:33ad /128
ff32::3333/64
```

Related Commands

Command	Description
ipv6 access-list	N/A

Platform Description N/A

7.32 ipv6 pim static-rp-preferred

Use this command to configure a higher priority for static RP over the C-RP, Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim static-rp-preferred

no ipv6 pim static-rp-preferred

default ipv6 pim static-rp-preferred

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, the priority of the RP elected through BSR mechanism is high than the one configured statically.

Command Mode Interface configuration mode

Usage Guide With this command configured, the priority of the static RP is higher than the one elected through the BSR mechanism.

Configuration Examples The following example configures the priority of the static RP is higher than the one elected through the BSR mechanism.

```
Orion_B54Q# configure terminal
Orion_B54Q(config-if)# ipv6 pim static-rp-preferred
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.33 ipv6 pim triggered-hello-delay

Use this command to configure Triggered-Hello-Delay time on the interface. Use the **no** or **default** form of this command to restore the default setting.

ipv6 pim triggered-hello-delay *seconds*

no ipv6 pim triggered-hello-delay

default ipv6 pim triggered-hello-delay

Parameter Description

Parameter	Description
interval-seconds	In the range from1 to 5 in the unit of seconds.

Defaults The default is 5 seconds.

Command Mode Interface configuration mode

Usage Guide Use this command to configure the triggered-hello-delay of the interface. When the interface starts or detects a new neighbor, it uses the trigger-hello-delay to generate random time, and then the interface sends the Hello message at the random time.

Configuration Examples The following example sets the triggered-hello-delay to 3 seconds.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interface g 0/3
Orion_B54Q(config-if)# ipv6 pim triggered-hello-delay 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.34 show debugging

Use this command to display the debugging status.

show debugging

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Mode

Usage Guide This command is used to turn on debugging switch.

Configuration Examples The following example displays the debugging status.

```
Orion_B54Q # show debugging
PIM-SM Debugging status:
PIM packet debugging is on.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.35 show ipv6 pim sparse-mode bsr-router

Use this command to display the BSR information.

show ipv6 pim sparse-mode bsr-router

Parameter Description

Parameter	Description
N/A	N/A

Defaults Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Command Mode Privileged EXEC mode/ global configuration mode / interface configuration mode

Usage Guide This command is used to display BSR information.

Configuration Examples The following example displays BSR information.

```
Orion_B54Q# show ipv6 pim sparse-mode bsr-router
PIMv2 Bootstrap information
This system is the Bootstrap Router (BSR)
BSR address: 3333::8888
Uptime:00:03:31, BSR Priority: 64, Hash mask length: 126
Next bootstrap message in 00:00:47
Role: Candidate BSR  Priority: 64, Hash mask length: 126
State: Elected BSR
Candidate RP: 3333::8888(GigabitEthernet 0/5)
Advertisement interval 60 seconds
Next Cand_RP_advertisement in 00:00:37
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.36 show ipv6 pim sparse-mode interface

Use this command to display PIM-SMv6 interface information.

show ipv6 pim sparse-mode interface [*interface-type interface-number* [**detail**]]

Parameter Description

Parameter	Description
interface-type interface-number	(Optional) Interface name. This command takes effect for all interfaces by default.
detail	(Optional) Displays the details of an interface.

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command displays the PIM-SMv6 information on the interface.

Configuration Examples The following example displays the PIM-SMv6 interface information.

```
Orion_B54Q #show ipv6 pim sparse-mode interface detail
GigabitEthernet 0/5 (vif 1):
Address fe80::2d0:f8ff:fe22:33ad, DR fe80::2d0:f8ff:fe22:34b3
Hello period 30 seconds, Next Hello in 6 seconds
Triggered Hello period 5 seconds
Secondary addresses:
   3333::8888
   4444::4444
  Neighbors:
   fe80::2d0:f8ff:fe22:34b3
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.37 show ipv6 pim sparse-mode local-members

Use this command to display the local MLD information on the PIM-SMv6 interface.

show ipv6 pim sparse-mode local-members [*interface-type interface-number*]

Parameter Description

Parameter	Description
interface-type interface-number	(Optional) Interface name. This command takes effect for all interfaces by default.

Defaults N/A

Command Mode Privileged EXEC mode/ global configuration mode / interface configuration mode

Usage Guide This command displays the local MLD information on the PIM-SMv6-enabled interface.

Configuration Examples The following example displays the local MLD information on the PIM-SMv6 interface.

```
Orion_B54Q (config-if)#show ipv6 pim sparse-mode local-members
PIM Local membership information
GigabitEthernet 0/5:
  (*, ff66::6666) : Include
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.38 show ipv6 pim sparse-mode mroute

Use this command to display the PIM-SMv6 routing information.

show ipv6 pim sparse-mode mroute [*group-or-source-address* [*group-or-source-address*]]

Parameter Description

Parameter	Description
group-or-source-address	Group address or source address. Two addresses cannot both be the group addresses or the source addresses.

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command is used to display route information. Only one group IPv6 address, one source IPv6 address or one group IPv6 address-source IPv6 address pair can be configured at a time. You can also specify no group IP address or source IPv6 address.

Configuration Examples N/A

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.39 show ipv6 pim sparse-mode neighbor

Use this command to display the neighbor information.

show ipv6 pim sparse-mode neighbor [**detail**]

Parameter Description

Parameter	Description
detail	(Optional) Displays the details of an interface.

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command displays the information on neighbors.

Configuration Examples The following example displays the neighbor information..

```
Orion_B54Q# show ipv6 pim sparse-mode neighbor detail
Nbr fe80::2d0:f8ff:fe22:34b3 (GigabitEthernet 0/5)
 Expires in 86 seconds
  Secondary addresses:
    6666::6666
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.40 show ipv6 pim sparse-mode nexthop

Use this command to display the next hop information, including the interface ID, address and metric.

show ipv6 pim sparse-mode nexthop

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command displays the information on the next hop, including interface number, IP address and metric.

Configuration Examples N/A

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.41 show ipv6 pim sparse-mode rp-hash

Use this command to display the RP information corresponding to the group address.

show ipv6 pim sparse-mode rp-hash *ipv6-group-address*

Parameter Description

Parameter	Description
ipv6_group-address	IPv6 group address

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command displays the information on the RP of the specific group IPv6 address.

Configuratio The following example displays the RP information corresponding to the group address..

n Examples

```
Orion_B54Q# show ipv6 pim sparse-mode rp-hash ff66::6666
RP: 3333::8888
Info source: 3333::8888, via bootstrap
PIMv2 Hash Value 126
RP 3333::8888, via bootstrap, priority 192, hash value 1468234650
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.42 show ipv6 pim sparse-mode rp mapping

Use this command to display the information on all RPs and the multicast groups they serve.

show ipv6 pim sparse-mode rp mapping

Parameter Description

Parameter	Description
mapping	All groups and RP information.

Defaults N/A

Command Mode Privileged EXEC mode/ Global configuration mode / Interface configuration mode

Usage Guide This command displays the information on all RPs and the multicast groups they serve.

Configuration Examples The following example displays the information on all RPs and the multicast groups they serve.

```
Orion_B54Q# show ipv6 pim sparse-mode rp mapping
PIM Group-to-RP Mappings
This system is the Bootstrap Router (v2)
Group(s): ff00::/8
  RP: 3333::1
    Info source: 3333::1, via bootstrap, priority 192
         Uptime: 00:12:40, expires: 00:01:50
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7.43 show ipv6 pim sparse-mode track

Use this command to display the number of sent and received PIM packets during the period from the beginning of the statistics till now.

show ipv6 pim sparse-mode track

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/ global configuration mode / interface configuration mode

Usage Guide This command is used to display the number of sent and received PIM packets during the period from the beginning of the statistics till now.. When the system starts up, it sets the start time of the statistics. The start time of the statistics is reconfigured and the PIMv6 packet counter is cleared on calling the clear ipv6 pim sparse-mode track every time.

Configuration Examples The following example displays the number of sent and received PIM packets during the period from the beginning of the statistics till now.

```
Orion_B54Q# show ipv6 pim sparse-mode track
PIMv6 packet counters track
Elapsed time since counters cleared: 00:04:03
                                received        sent
Valid PIMSMv6 packets:      0               8
Hello:                      0               8
Join-Prune:                 0               0
Register:                       0               0
Register-Stop:              0               0
Assert:                         0               0
BSM:                            0               0
C-RP-ADV:                       0               0
PIMDMv6-Graft:              0
PIMDMv6-Graft-Ack:          0
PIMDMv6-State-Refresh:      0
Unknown PIMv6 Type:         0
Errors:
Malformed packets:                          0
Bad checksums:                                      0
Send errors:                                            0
Packets received with unknown PIMv6 version:   0
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

8 MSDP Commands

8.1 clear ip msdp peer

Use this command to clear specific MSDP peer. This will clear the connection to the MSDP peer and then reestablish the connection to MDSP peer. The statistics of MSDP peer will be cleared at the same time.

clear ip msdp peer *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to clear the TCP connection to the specified MSDP peer and clear all the MSDP peer statistics.

Configuration Examples The following example clears MDSP peer of 218.14.5.23.

```
Orion_B54Q# clear ip msdp peer 218.14.5.23
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.2 clear ip msdp sa-cache

Use this command to clear SA cache entries.

clear ip msdp sa-cache [*group-address*]

Parameter Description

Parameter	Description
group-address	Group address. If the multicast group address is not specified, all SA cache entries will be cleared; if the multicast group address is specified, the SA cache entries of this multicast group will be cleared.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to clear the SA cache entries learned from MSDP peer. If no multicast group address is specified, all SA cache entries will be cleared.
After SA cache entries are cleared, the MSDP device will need to relearn SA messages.

Configuration Examples The following example clears the SA cache entries with the multicast group 224.1.1.1.

```
Orion_B54Q# clear ip msdp sa-cache 224.1.1.1
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.3 clear ip msdp statistics

Use this command to clear the statistics of MSDP peers without resetting the TCP sessions.
clear ip msdp statistics [*peer-address*]

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer whose statistics counters, reset count, and input/output count will be cleared.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to clear the statistics of MSDP peers and view the new statistics of MSDP peers. This command can clear the statistics of one or more MDSP peers without resetting the MSDP peer.

Configuration Examples The following example clears the statistics of the MSDP peer with IP address being 61.83.1.52.

```
Orion_B54Q# clear ip msdp statistics 61.83.1.52
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.4 ip msdp default-peer

Use this command to define a default MSDP peer.

Use **no** or **default** form of this command to restore the default setting.

ip msdp default-peer *peer-address* [**prefix-list** *prefix-list-name*]

no ip msdp default-peer *peer-address*

default ip msdp default-peer *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
prefix-list prefix-list-name	Specifies the BGP prefix list.

Defaults By default, no default MSDP peer is configured.

Command Mode Global configuration mode

Usage Guide The RPF-Peer calculation rule for the specified RP address may leads the loss of RPF-Peer information, which causes that the SA messages are dropped directly without the Peer-RPF check. With a default peer configured, the SA messages are ensured to pass the Peer-RFP check, so that the local host could accept the SA messages to learn the multicast source information carried by the SA messages.

If "prefix-list prefix-list-name" is not specified, all SA messages from the default MSDP peer will be accepted.

If "prefix-list prefix-list-name" is specified, only the SA messages from the RP specified by prefix-list prefix-list-name will be accepted.

If "prefix-list prefix-list-name" is specified but the prefix list is not configured, all SA messages from this default MSDP peer will be accepted.

Configuration Examples The following example configures 172.16.33.1 as the default peer.

```
Orion_B54Q(config)# ip msdp peer 172.16.33.1
Orion_B54Q(config)# ip msdp peer 172.16.34.2
Orion_B54Q(config)# ip msdp default-peer 172.16.33.1
```

Related Commands

Command	Description
ip msdp peer	Creates MSDP peer.

Platform Description This command is supported only on layer-3 device.

ip msdp description

Use this command to add descriptive information for MSDP peer.
Use **no** or **default** form of this command to restore the default setting.
ip msdp description *peer-address text*
no ip msdp description *peer-address*
default ip msdp description *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
text	Descriptive information for MSDP peer

Defaults No descriptive information is configured for MSDP peer.

Command Mode Global configuration mode

Usage Guide The administrator can configure descriptive information for MSDP peers in order to identify them conveniently.
If the descriptive information A is specified for an MSDP peer, A is displayed. If no descriptive information is specified, “No description” is displayed.

Configuration Examples The following example configures the descriptive information for peer 172.17.1.2 as "customer-a".

```
Orion_B54Q(config)# ip msdp description 172.171.1.2 customer-a
```

Related Commands

Command	Description
show ip msdp peer	Displays the descriptive information for MSDP peer.

Platform Description This command is supported only on L3 devices.

8.5 ip msdp filter-sa-request

Use this command to filter the SA request messages sent from MSDP peer.

Use the **no** or **default** form of this command to restore the default setting.
ip msdp filter-sa-request *peer-address* [**list** *access-list*]
no ip msdp filter-sa-request *peer-address*
default ip msdp filter-sa-request *peer-address*

Parameter

Parameter	Description

Description

peer-address	IP address of MSDP peer
list access-list	The standard IP access list number or name for limiting multicast group addresses

Defaults All SA request messages from MSDP peer will be accepted and replied.

Command Mode Global configuration mode

Usage Guide Use this command to control which SA request messages will be accepted and replied.
If no access list is specified, all SA request messages will be ignored. If the access list is specified, only the SA request messages from the multicast group permitted by the access list will be accepted, and other messages will be ignored.

Configuration Examples The following example configures to filter SA request messages from peer 172.16.223.1 and only accept SA request messages with group address falling within 224.0.1.0-224.0.1.255.

```
Orion_B54Q(config)# ip msdp filter-sa-request 172.16.223.1 list 1
Orion_B54Q(config)# access-list 1 permit 224.0.1.1 0.0.0.255
```

Related Commands

Command	Description
ip msdp peer	Creates MSDP peer.

Platform Description This command is supported only on L3 devices.

8.6 ip msdp mesh-group

Use this command to configure a MSDP peer to be a member of a mesh group.
Use the **no** form of this command to remove the configuration.
Use the **default** form of this command to restore the default settings.
ip msdp mesh-group *mesh-name peer-address*
no ip msdp mesh-group *mesh-name peer-address*
default ip msdp mesh-group *mesh-name peer-address*

Parameter Description

Parameter	Description
mesh-name	Name of mesh group, case sensitive
peer-address	IP address of MSDP peer to be a member of mesh group.

Defaults No mesh group will be created, and MSDP peers do not belong to any mesh group.

Command Mode Global configuration mode

Usage Guide All MSDP peers in the mesh group shall be fully meshed, namely MSDP peer relationship has been established between every two members in the mesh group.
The SA received by one member of the mesh group won't be forwarded to other members in the same mesh group, thus reducing SA flooding and simplify Peer-RPF forwarding.

Configuration Examples The following example configures MSDP peer at address 192.168.1.3 to be a member of the mesh group named "msdp-mesh".

```
Orion_B54Q(config)# ip msdp mesh-group msdp-mesh 192.168.1.3
```

Related Commands

Command	Description
show ip msdp mesh-group	Displays the information of mesh group.

Platform Description This command is supported only on L3 devices.

8.7 ip msdp originator-id

Use this command to allow a speaker that originates a SA message to use the IP address of the interface as the originator address in the SA message.
Use the **no** form of this command to remove this configuration.
Use the **default** form of this command to restore the default setting.
ip msdp originator-id *interface-type interface-number*
no ip msdp originator-id
default ip msdp originator-id

Parameter Description

Parameter	Description
interface-type	Interface type and interface number
interface-number	The master IP address of this interface will be used as the originator address in the SA messages. If no IP address is configured for this interface, or the interface is shut down, then the originator address in the SA messages won't use the master IP address of this interface, but use the RP address configured by PIM.

Defaults By default, the originator address in SA messages will be the RP address configured by PIM.

Command Mode Global configuration mode

Usage Guide Under certain circumstances, you may expect to change the originator address in SA messages, such as during Anycast-RP deployment. By this time, you can use this command to modify the originator address in SA messages.

Configuration Examples

```
Orion_B54Q(config)# ip msdp originator-id loopback0
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.8 ip msdp password

Use this command to enable MD5 encryption of the TCP connection between MSDP peers.
Use the **no** or **default** form of this command to restore the default setting.
ip msdp password peer *peer-address* [*encryption-type*] *string*
no ip msdp password peer *peer-address*
default ip msdp password peer *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
encryption-type	Grade of password: 0 (lowest level)-7 (highest level). Currently, only 0 and 7 are supported. The default encryption type is 0.
string	The password used for TCP MD5 authentication. Range: up to 80 characters when the encryption type is 0; up to 160 characters when the encryption type is 7.

Defaults MD5 encryption of the TCP connection between MSDP peers is not enabled.

Command Mode Global configuration mode

Usage Guide When it is needed to authenticate the MSDP peers, you can enable MD5 encryption of TCP connection between MSDP peers. In such a case, two interconnected MSDP peers must be configured with MD5 authentication with same password, or else the connection will fail.
If the password is configured or changed, the local MSDP device won't terminate the current session, but will try to use the new password to maintain the current session until timeout.
If you have configure the password locally for the MSDP peer but no password is configured on MSDP, the following warning message will be displayed on the console:
%TCP-6-BADAUTH: MD5 digest NOT expected but found (200.200.200.6, 39996)->(200.200.200.16, 639)
If different MD5 passwords are configured between MSDP peers, the following warning message will be displayed on the console:
%TCP-6-BADAUTH: MD5 digest failed for (200.200.200.6, 12302)->(200.200.200.16, 639)

⚠ If the encryption type is 7, the entered encryption key must be even and not less than 4.

Configuration Examples The following example configures the MD5 password of "test" for the MSDP peer of 10.32.43.144.

```
Orion_B54Q(config)# ip msdp password peer 10.32.43.144 0 test
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.9 ip msdp peer connect-source

Use this command to create MSDP peer.

Use **no** or **default** form of this command to remove MSDP peer.

ip msdp peer *peer-address* **connect-source** *interface-type interface-number*

no ip msdp peer *peer-address*

default ip msdp peer *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
connect-source interface-type interface-number	Interface type and interface number. The local MSDP device uses the main address of this interface as the source IP for the TCP connection to the remote MSDP peer. Loopback interface is recommended. If no IP address is configured for this interface, or the interface is shut down, then MSDP peer relation cannot be established.

Defaults No MSDP peer is created.

Command Mode Global configuration mode

Usage Guide To enable MSDP, MSDP peer must be created.

Configuration Examples The following example configures the main address of interface loopback 0 as the source address for establishing MSDP peer relation with 192.168.5.1.

```
Orion_B54Q(config)# ip msdp peer 192.168.5.1 connect-source loopback 0
```

Related Commands

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

Platform Description This command is supported only on L3 devices.

8.10 ip msdp redistribute

Use this command to configure which (S, G) entries from the multicast routing table can be advertised to MSDP peers.
Use the **no** form of this command to remove this configuration.
Use the **default** form of this command to restore the default settings.
ip msdp redistribute [**list** *access-list-name*] [**route-map** *route-map-name*]
no ip msdp redistribute
default ip msdp redistribute

Parameter Description

Parameter	Description
list access-list-name	Number or name of an extended IP access list that controls which multicast routes (S, G) can be advertised.
route-map route-map-name	Defines route-map.

Defaults All multicast sources (S, G) registered on the local RP will be advertised.

Command Mode Global configuration mode

Usage Guide After redistribution filtering is configured, the (S, G) information from the local AS or the other AS can be added to the MSDP only through redistribution filtering.
If "**list** *access-list-name*" is specified, only those matched multicast routes (S, G) will be advertised.
If "**route-map** *map-name"* is specified, only multicast routes (S, G) matching the criteria given in "map-name" will be advertised.
If two keywords are specified, then multicast routes (S, G) matching all conditions will be advertised.
If the "**ip msdp redistribute**" command is configured with no keywords, no multicast sources will be advertised.

Configuration Examples The following example configures to only advertise multicast routes with multicast source being 200.200.200.0/24 and group address being 225.1.1.0/24.

```
Router(config)# ip msdp redistribute list 100
Router(config)# ip access-list extended 100
Router(config-ext-nacl)# permit ip 200.200.200.0 0.0.0.255 225.1.1.0
0.0.0.255
```

Related Commands

Command	Description
ip msdp sa-filter in	Configures the incoming filter for SA messages.

ip msdp sa-filter out	Configures the outgoing filter for SA messages.

Platform Description This command is supported only on L3 devices.

8.11 ip msdp sa-filter in

Use this command to configure an incoming filter for SA messages.
Use the **no** or **default** form of this command to remove the incoming filter.
ip msdp sa-filter in *peer-address* [**list** *access-list-name*] [**route–map** *route-map-name*] [**rp-list** *rp-access-list-name*] [**rp-route-map** *rp-route-map-name*]
no ip msdp sa-filter in *peer-address*
default ip msdp sa-filter in *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
list access-list-name	Number or name of an extended IP access list that controls which multicast routes (S, G) can be received.
route-map route-map-name	Specify the name of route-map; only SA messages matching the criteria given in "map-name" can pass through.
rp-list rp-access-list-name	Number or name of standard access list that controls RPs.
rp-route-map rp-route-map-name	Specify the name of route map for RP; only the SA messages matching rp-map-name can be accepted.

Defaults All incoming SA messages will be accepted without filtering.

Command Mode Global configuration mode

Usage Guide If the command is configured, but no access list or route map is specified, all incoming SA messages will be filtered.
If only the **list** keyword or the **route-map** keyword is used, the multicast source (S, G) in SA messages matching the criteria corresponding to this keyword will be accepted.
If only the **rp-list** keyword or the **rp-route-map** keyword is used, the SA message will be accepted if the RP address carried in SA message matches the criteria corresponding to this keyword.
If two or more keywords of **list, route-map, rp-list** and **rp-route-map** are used, the SA message will be accepted if any multicast source (S, G) in SA message meet the criteria corresponding to all keywords.

Configuration Examples The following example configures that all SA messages from the peer of 10.234.1.43 will be filtered.

```
Orion_B54Q(config)# ip msdp peer 10.234.1.43
Orion_B54Q(config)# ip msdp sa-filter in 10.234.1.43
```

Related Commands

Command	Description
ip msdp peer	Configures MSDP peer.
ip msdp sa-filter-out	Configures the outgoing filter for SA messages received from MSDP peers.

Platform Description This command is supported only on L3 devices.

8.12 ip msdp sa-filter out

Use this command to configure an outgoing filter for SA messages.
Use the **no** or **default** form of this command to remove the outgoing filter.
ip msdp sa-filter out *peer-address* [**list** *access-list-name*] [**route–map** *route-map-name*] [**rp-list** *rp-access-list-name*] [**rp-route-map** *rp-route-map-name*]
no ip msdp sa-filter out *peer-address*
default ip msdp sa-filter out *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
list access-list-name	Number or name of an extended IP access list that controls which multicast routes (S, G) can be received.
route-map route-map-name	Specify the name of route-map; only SA messages matching the criteria given in "map-name" can pass through.
rp-list rp-access-list-name	Number or name of standard access list that controls RPs.
rp-route-map rp-route-map-name	Specify the name of route map for RP; only the SA messages matching rp-map-name can be accepted.

Defaults The outgoing SA messages won't be filtered. All SA messages received will be forwarded to the MSDP peer.

Command Mode Global configuration mode

Usage Guide If the command is configured, but no access list or route map is specified, all SA messages won't be forwarded to this MSDP peer.
If only one keyword of **list, route-map, rp-list** and **rp-route-map** is used, the multicast source pair (S, G) will be forwarded to this MSDP peer if the criteria corresponding to this keyword are met.
If two or more keywords of **list, route-map, rp-list** and **rp-route-map** are used, the (S, G) pair will only be forwarded to this MSDP peer if criteria corresponding to all keywords are met.

Configuration Examples The following example allows only multicast sources that pass access list 100 to be forwarded to the peer of 10.234.1.43.

```
Orion_B54Q(config)# ip msdp peer 10.234.1.43
Orion_B54Q(config)# ip msdp sa-filter out 10.234.1.43 list 100
Orion_B54Q(config)# access 100 permit ip 10.211.0.0 0.0.255.255 224.12.0.0
0.0.255.255
```

Related Commands

Command	Description
ip msdp peer	Configures MSDP peer.
ip msdp sa-filter-in	Configures the incoming filter for SA messages received from MSDP peers.

Platform Description This command is supported only on L3 devices.

8.13 ip msdp sa-limit

Use this command to configure the allowable maximum number of SA cache entries from a MSDP peer.

Use the **no** or **default** form of this command to restore the default settings.

ip msdp sa-limit *peer-address sa-limit*

no ip msdp sa-limit *peer-address*

default ip msdp sa-limit *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
sa-limit	Maximum number of SA messages from an MSDP peer allowed in the SA cache.

Defaults The maximum number of SA messages from an MSDP peer allowed in the SA cache is not limited.

Command Mode Global configuration mode

Usage Guide It is suggested to configure this command on all MSDP peers to prevent SA flooding attacks from MSDP peers

Configuration Examples The following example configures the SA message limit to 100 for the MSDP peer with IP address being 172.16.3.1.

```
Orion_B54Q(config)# ip msdp sa-limit 172.16.3.1 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description

8.14 ip msdp shutdown

Use this command to shut down the connection to MSDP peer.
Use the **no** or **default** form of this command to restore the default settings.
ip msdp shutdown *peer-address*
no ip msdp shutdown *peer-address*
default ip msdp shutdown *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer

Defaults The connection to peer is not shut down.

Command Mode Global configuration mode

Usage Guide Only the TCP connection to the specified MSDP peer will be shut down. Neither the MSDP peer nor its configurations will be cleared.

Configuration Examples The following example shuts down the MSDP peer at IP address 192.168.7.20.

```
Orion_B54Q(config)# ip msdp shutdown 192.168.7.20
```

Related Commands

Command	Description
ip msdp peer	Creates MSDP peer.

Platform Description This command is supported only on L3 devices.

8.15 ip msdp timer

Use this command to configure the interval for timer re-connection.
Use the **no** or **default** form of this command to restore the default settings.
ip msdp timer *interval*
no ip msdp time
default ip msdp timer

Parameter Description

Parameter	Description
interval	Interval for timer re-connection, within the range from 1 to 60 (in

	second)

Defaults The default interval is 30 seconds.

Command Mode Global configuration mode

Usage Guide By default, the interval for timer re-connection is 30 seconds, that is, the peer in active end can initiate only one TCP connection within 30 seconds. In certain applications, the interval is expected to be decreased in order to accelerate convergence of MSDP peering relation.

Configuration Examples The following example sets the interval for timer re-connection to 20 seconds.

```
Orion_B54Q(config)# ip msdp timer 20
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.16 ip msdp ttl-threshold

Use this command to limit the TTL value of multicast data packets carried in SA messages in order to limit the transmission of multicast packets.
Use the **no** or **default** form of this command to restore to the default settings.
ip msdp ttl-threshold *peer-address ttl-value*
no ip msdp ttl-threshold *peer-address*
default ip msdp ttl-threshold *peer-address*

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer
ttl-value	TTL value (0-255)

Defaults TTL threshold is 0 by default.

Command Mode Global configuration mode

Usage Guide This command limits multicast data packets which are sent in data-encapsulated SA messages. Only multicast packets with an IP-header TTL greater than or equal to the ttl-value will be sent to the MSDP peer. If the TTL value of multicast data is less than the threshold configured, then the multicast data will be separated from SA messages and discarded, and the SA messages without multicast data will be sent to the MSDP peer.

This command only limits the transmission of multicast data in SA messages without compromising the transmission of multicast sources in SA messages

Configuration Examples The following example configures the TTL threshold for peer at IP address 192.168.10.1 to 8 hops:

```
Orion_B54Q(config)# ip msdp ttl-threshold 192.168.10.1 8
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.17 show ip msdp count

Use this command to display the number of sources and groups originated in SA messages and the number of SA messages from an MSDP peer in the SA cache.

show ip msdp count [*as-number*]

Parameter Description

Parameter	Description
as-number	Display the number of sources and groups originated in SA messages from the specified autonomous system number.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples

```
Orion_B54Q# sh ip msdp count
SA State per Peer Counters, <Peer>: <# SA learned>
  1.1.1.2: 0
  100.100.100.14 : 0
  100.100.100.15 : 0
  100.100.100.200: 0
  200.200.200.2 : 2
  200.200.200.3 : 0
  200.200.200.6 : 0
  200.200.200.13 : 0
  200.200.200.66 : 0
SA State per ASN Counters, <asn>: <# sources>/<# groups>
Total entries: 2
100: 1/2   .
```

Field	Description
200.200.200.200:2	MSDP peer with IP address 200.200.200.200; 2 SA messages in the SA cache.
Total entries	Total number of SA entries in the SA cache.
?:1/2	Unknown autonomous system: 1 source address/2 multicast group addresses

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.18 show ip msdp mesh-group

Use this command to display the information of mesh group.

show ip msdp mesh-group

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples

```
Orion_B54Q# sh ip msdp mesh-group
MSDP peers in each Mesh-group,<Mesh-group name>:<# peers>
msdp-mesh
  1.1.1.2
  1.1.1.3
```

Field	Description
msdp-mesh	Name of mesh group
1.1.1.2	One MSDP peer under this mesh group.

Related Commands

Command	Description

N/A	

Platform Description This command is supported only on L3 devices.

8.19 show ip msdp peer

Use this command to display detailed information about the MSDP peer.

show ip msdp peer [*peer-address*]

Parameter Description

Parameter	Description
peer-address	IP address of MSDP peer

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples

```
Orion_B54Q#show ip msdp peer 20.0.0.1
MSDP PEER 20.0.0.1 (No description), AS unknown
  Connection status:
    State: Listen, Resets: 1, Connection source: GigabitEthernet 0/1
(20.0.0.2)
    Uptime(Downtime): 00:00:25, Message sent/received: 13/19
    Input messages discarded: 0
    Connection and counters cleared 00:13:25 ago
    Local Address of connection: 20.0.0.2
    MD5 signature protection on MSDP TCP connection: enabled
  SA Filtering:
    Input (S,G) Access-list filter: None
    Input (S,G) route-map filter: None
    Input RP Access-list filter: None
    Input RP Route-map filter: None
    Output (S,G) Access-list filter: None
    Output (S,G) Route-map filter: None
    Output RP Access-list filter: None
    Output RP Route-map filter: None
  SA-Requests:
    Input filter: None
  Peer ttl threshold: 0
  SAs learned from this peer: 2, SAs limit: No-limit
```

```
Message counters:
  SA messages discarded: 0
  SA messages in/out: 13/0
  SA Requests discarded/in: 0/0
  SA Responses out: 0
  Data Packets in/out: 6/0
```

Field	Description
MSDP Peer	IP address of MSDP peer.
AS	Autonomous system to which the MSDP peer belongs. If it is an unknown AS, “unknown” will be displayed.
State:	State of the MSDP peer.
Connection source:	Interface used to obtain the source address for TCP connection.
Uptime(Downtime):	Up time/down time of MSDP peer.
Messages sent/received:	Number of SA messages received.
SA Filtering:	SA filtering information.
SAs learned from this peer:	Number of SA entries learned from MSDP peer.
SAs limit:	SA message limit for this MSDP peer.

Related Commands

Command	Description
N/A	N/A

Platform Description This command is supported only on L3 devices.

8.20 show ip msdp rpf-peer

Use this command to show the information about MSDP RPF peer corresponding to the specified originator address.

show ip msdp rpf-peer *ip-address*

Parameter Description

Parameter	Description
ip-address	IP address of the originator of SA messages

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide Use this command to learn the Peer-RFP information about the originator.

Configuration Examples The following example displays the rpf-peer information of RP at address 1.1.1.1:

```
Orion_B54Q# sh ip msdp rpf-peer 1.1.1.1
RPF peer information for 1.1.1.1
RPF peer: 200.200.200.2
RPF rule: Peer is only active peer
RPF route/mask: Not-used
RPF type: Not-used
```

Related Commands

Command	Description
N/A	N/A

Platform Description This command is only supported on L3 devices.

8.21 show ip msdp sa-cache

Use this command to display (S, G) state learned.

show ip msdp sa-cache [*group-address* | *source-address*] [*group-address* | *source-address*] [*as-number*]

Parameter Description

Parameter	Description
group-address | source - address	Group address or source address of the group or source about which (S, G) information is displayed.
as-number	Autonomous system number generated by SA messages.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays (S, G) state learned.

```
Orion_B54Q# sh ip msdp sa-cache
MSDP Source-Active Cache: 2 entries
 MSDP Source-Active Cache: 2 entries
  (200.200.200.200, 227.1.2.2), RP: 20.20.20.20, (M)BGP/AS 100,
04:17:09/00:02:05, Peer 200.200.200.2
    Learned from peer 200.200.200.2, RPF peer 200.200.200.2,
    SAs received: 277, Encapsulated data received: 0
  (200.200.200.200, 227.1.2.3), RP: 20.20.20.20, (M)BGP/AS 100,
```

```
04:17:09/00:02:05, Peer 200.200.200.2
    Learned from peer 200.200.200.2, RPF peer 200.200.200.2,
    SAs received: 277, Encapsulated data received: 0
```

Field	Description
(200.200.200.200, 227.1.2.2)	Source address and group address.
RP 20.20.20.20	RP address generating SA messages.
MBGP/AS	The autonomous system of the RP generating SA messages is unknown.
04:17:09/00:02:05	The route has been cached for 4 hours 17 minutes and 9 seconds. If no SA message is received in 2 minutes and 5 seconds, it will be removed from the SA cache.

Related Commands

Command	Description
N/A	N/A

Platform Description This command is only supported on L3 devices.

8.22 show ip msdp sa-originated

Use this command to display the (S, G) information to be sent by the local device. The (S, G) information has passed redistribution filtering.

show ip msdp sa-originated

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide This command can be used to display the (S, G) information sent by the local device that is the RP in PIM-SM with the multicast source (S, G) registered and is configured with MSDP peer.
(S, G) information displayed has passed redistribution filtering, but, whether the information can be sent to the MSDP peer requires the results of egress filtering for the information.

Configuration Examples The following is sample output of "show ip msdp sa-originated" command.

```
Orion_B54Q# sh ip msdp sa-originated
MSDP Source-Active Originated: 5 entries
```

```
(192.168.23.78, 225.0.0.1), RP: 192.168.23.249
(192.168.23.79, 225.0.0.2), RP: 192.168.23.249
(192.168.23.80, 225.0.0.3), RP: 192.168.23.249
(192.168.23.81, 225.0.0.4), RP: 192.168.23.249
(192.168.23.82, 225.0.0.5), RP: 192.168.23.249
```

Field	Description
(192.168.23.78, 225.0.0.1)	The source address (the first IP address) and group address (the second IP address) of SA to be sent.
RP 192.168.23.249	RP address of SA sent.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

8.23 show ip msdp summary

Use this command to display the summary information about all MSDP peers.
show ip msdp summary

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide If the local device configured with MSDP peers is the PIM-SM Rendezvous Point (RP) and multicast sources (S,G) registers in the RP, the command will display: (S,G) to Send
The displayed (S,G) have gone through redistribution filtering (command: **ip msdp redistribute**). However, whether these (S,G) will be delivered to MSDP peers successfully relies on the outgoing filter (command: **ip msdp sa-filter out**).

Configuration Examples The following example displays the summary information about all MSDP peers.

```
Orion_B54Q# sh ip msdp summary

Msdp Peer Status Summary
Peer Address       As       State      Uptime/Downtime    Reset-Count
Sa-Count    Peer-description
```

```
200.200.200.2      100      Up         04:22:11           10
6616            No description
200.200.200.3      100      Down       19:17:13           4
0                peer-A
```

Field	Description
Peer Address	IP address of MSDP peer
AS	Autonomous system to which the MSDP peer belongs
State	State of the MSDP peer
Uptime/Downtime	Up time or down time of MSDP peer

Related Commands

Command	Description
N/A	N/A

Platform Description This command is only supported on L3 devices.

9 IGMP Snooping Commands

9.1 clear ipv6 mld snooping gda-table

Use this command to clear the forwarding table information learned dynamically.

clear ipv mld snooping gda-table

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to clear the forwarding table information learned dynamically.

Configuration Examples The following example clears the forwarding table information learned dynamically:

```
Orion_B54Q# clear ip mld snooping gda-table
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.2 clear ipv6 mld snooping statistics

Use this command to clear the MLD Snooping statistics, including the entry number, the entry volume, the number of various received packets, the group information and the interface information of the corresponding group.

clear ip mld snooping statistics

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide

Configuration Examples The following example clears the MLD Snooping statistics.

```
Orion_B54Q# clear ip mld snooping statistics
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.3 deny

To deny the forwarding of the multicast streams in the range specified by the profile, execute the deny configuration command in the profile configuration mode.

Parameter Description N/A

Default The forwarding of the multicast streams in the range specified by the profile is denied.

Command Mode Profile configuration mode

Usage Guide First, configure the multicast range using the range command in the profile configuration mode. In addition, the profile must be applied to the interface in order to make the profile configuration take effect.

Configuration Examples The following is an example of deny the forwarding of the multicast stream 224.2.2.2:

```
Orion_B54Q(config)# ip igmp profile 1
Orion_B54Q(config-profile)# range 224.2.2.2
Orion_B54Q(config-profile)# deny
```

Related Commands

Command	Description
ip igmp profile	Creates a profile.
range	Configures the multicast address range.

9.4 ip igmp profile

This is a mode navigation command. Use this command to select a profile and enter the IGMP profile configuration mode.

ip igmp profile *profile-number*
no ip igmp profile *profile-number*

Parameter Description	**Parameter**	**Description**
	profile-number	Profile number, in the range from 1 to 65535

Default N/A.

Command Mode Global configuration mode

Usage Guide The profile must be applied to the specified interface in order to make the profile take effect.

Configuration Examples The following is an example of creating a profile numbered 1 and entering the profile configuration mode.

```
Orion_B54Q(config)# ip igmp profile 1
Orion_B54Q(config-profile)#
```

Related Commands

Command	**Description**
range	Configures the multicast address range.

9.5 ip igmp snooping

Use this command to enable IVGL mode.
ip igmp snooping ivgl
Use this command to enable SVGL mode.
ip igmp snooping svgl
Use this command to enable IVGL-SVGL mode.
ip igmp snooping ivgl-svgl
Use the **no** form of this command to disable IGMP snooping.
no ip igmp snooping
default ip igmp snooping

Parameter Description N/A.

Default Disabled.

Command Mode Global configuration mode

Usage N/A

Configuration Examples The following example demonstrates how to enable IGMP snooping and enter the IVGL mode:

```
Orion_B54Q(config)# ip igmp snooping ivgl
```

9.6 ip igmp snooping dyn-mr-aging-time

To configure the aging time of the routing interface that the switch learns dynamically, execute the **ip igmp snooping dyn-mr-aging-time** command .

ip igmp snooping dyn-mr-aging-time *time*

no ip igmp snooping dyn-mr-aging-time

Parameter Description	**Parameter**	**Description**
	time	Aging time of the routing interface that the switch learns dynamically

Defaults 300s.

Command Mode Global configuration mode.

Usage Guide When the dynamic routing interface learning function is enabled, this command sets the aging time of the routing interface. If the aging time is set too short, the routes may be added and deleted frequently.

Configuration Examples Set the aging time of the routing interface that the switch learns dynamically to 100 s:

```
Orion_B54Q(config)# ip igmp snooping dyn-mr-aging-time 100
```

Related Commands	**Command**	**Function**
	ip igmp snooping	Enables IGMP snooping.

9.7 ip igmp snooping fast-leave enable

To enable the fast leave function, execute the **ip igmp snooping fast-leave enable** command in the global configuration mode. The **no** form of this command is used to disable the function.

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

Parameter Description	**Parameter**	**Description**
	N/A	

Defaults Disabled.

Command Mode Global configuration mode

Usage Guide After you execute this command to enable the fast-leave function, the system will remove the corresponding multicast group on the corresponding interface upon the receipt of the IGMP leave message.
Subsequently, when the system receives a specific group query packet, the system does not forward it to the corresponding interface. Leave packets include IGMPv2 leave packets and IGMPv3 report packets of the include type without source addresses. The fast leave function applies to scenarios in which one interface is connected to only one host. This function saves bandwidth and resources.

Configuration Examples The following example enables the fast leave function on the switch:

```
Orion_B54Q(config)# ip igmp snooping fast-leave
```

Related Commands

Command	Function
N/A	

9.8 ip igmp snooping filter

To configure a port to receive a specific set of multicast streams, execute the **ip igmp snooping filter** command in the interface configuration mode to associate the port to a specific profile. The **no** form of this command is used to delete the associated profile.
ip igmp snooping filter *profile-number*
no ip igmp snooping filter *profile-number*

Parameter Description

Parameter	Description
profile-number	Profile number

Default N/A.

Command Mode Global configuration mode or interface configuration mode.

Usage Guide A specific profile must be created before association.

Configuration Examples The following example demonstrates how to associate profile 1 to a megabit port 0/1:

```
Orion_B54Q(config)# interface fastEthernet 0/1
Orion_B54Q(config-if)# ip igmp snooping filter 1
```

Related Commands	Command	Description
	ip igmp profile	Create a profile.

9.9 ip igmp snooping host-aging-time

Use this command to configure the aging time of IGMP dynamic ports. The **no** form of this command is used to restore the default aging time.

ip igmp snooping host-aging-time *seconds*

no ip igmp snooping host-aging-time

Parameter Description	Parameter	Description
	seconds	Aging time. The unit is second. The value ranges from 1 to 65535. The default value is 260.

Defaults 260

Command Mode Global configuration mode

Usage guideline The aging time of a dynamic port is set by the system when the port receives an IGMP packet from the host for joining a certain IP multicast group.

When such an IGMP packet is received, the system resets the aging timer for the port. The duration of this timer is determined by **host-aging-time**. If the timer expires, the system determines that there is no host in this port for receiving multicast packets. The multicast device removes the port from the IGMP Snooping group. After the **ip igmp snooping host-aging-time** command is executed, the aging time will be determined by **host-aging-time**. This command takes effect only after the system receives the next IGMP packet. This command does not change the current aging time.

Example The following example sets the aging time to 30 seconds:

```
Orion_B54Q(config)# ip igmp snooping host-aging-time 30
```

Related command	Command	Description
	-	-

Platform Description -

9.10 ip igmp snooping l2-entry-limit

Use this command to set the maximum number of multicast groups. The **no** form of this command is used to cancel the limit.

ip igmp snooping l2-entry-limit *number*

no ip igmp snooping l2-entry-limit

Parameter Description	Parameter	Description
	number	Number of multicast groups. The value ranges from 0 to 4096.

Defaults 1024

Command Mode Global configuration mode

Usage guideline The maximum number of multicast groups includes the multicast groups in all ports of all VLANs (including dynamic and static multicast groups). When the number of multicast groups reaches the limit, learning new group records and configuring new static multicast group ports are not allowed.

Example The following example sets the maximum number of multicast groups to 2000:

```
Orion_B54Q(config)# ip igmp snooping l2-entry-limit 2000
```

Related command	Command	Description
	show ip igmp snooping	Displays the maximum number of multicast groups.

Platform Description N/A

9.11 ip igmp snooping limit-ipmc

To add a multicast source IP address check entry, execute the **ip igmp snooping limit-ipmc** command in the global configuration mode. The **no** form of this command is used to delete a source IP checklist entry.

ip igmp snooping limit-ipmc vlan *vid* **address** *gaddress* **server** *saddress*

no ip igmp snooping limit-ipmc vlan *vid* **address** *gaddress* **server** *saddress*

Parameter Description	Parameter	Description
	Vid	VLAN ID of the source IP address check entry
	Gaddress	Multicast address
	Saddress	Multicast source IP address (multicast server)

Defaults N/A

Command Mode Global configuration mode

Usage Guide The source IP address check function must be enabled before an entry can be added.

Configuration Examples

```
Orion_B54Q(config)# ip igmp snooping limit-ipmc vlan 1 address 224.0.0.1 server 192.168.4.243
```

Related Commands

Command	Description
ip igmp snooping source-check default-server	Configures a default source IP address while enabling the IP check function.

9.12 ip igmp snooping max-groups

To configure the maximum number of groups that can be added dynamically to this interface, execute the **ip igmp snooping max-groups** command in the interface configuration mode. The **no** form of this command is used to remove the configuration.

ip igmp snooping max-groups *number*

no ip igmp snooping max-groups

Parameter Description

Parameter	Description
number	The parameter ranges 0 to 4294967294.

Defaults N/A

Command Mode Interface configuration mode

Usage Guide If a maximum number of multicast groups are configured, the device will no longer receive and process IGMP Report messages when the number of multicast groups on this interface is beyond the range.

Configuration Examples The following example configures the maximum number of multicast groups to 100 on the megabit interface 0/1:

```
Orion_B54Q(config)# interface fastEthernet 0/1
Orion_B54Q(config-if)# ip igmp snooping max-group 100
```

Related Commands

Command	Description
ip igmp snooping filter	Filters multicast groups that pass through a port.

9.13 ip igmp snooping mrouter learn pim-dvmrp

To configure a device to listen to the IGMP Query/Dvmrp or PIM Help packets dynamically in order to automatically identify a routing interface, execute the **ip igmp snooping mrouter learn** command in the global configuration mode. The **no** form of this command is used to disable the dynamic learning.

ip igmp snooping mrouter learn pim-dvmrp
no ip igmp snooping mrouter learn pim-dvmrp

Defaults Enabled

Command Mode Global configuration mode

Usage Guide Routing interface is a port through which a multicast device (with IGMP Snooping enabled) is directly connected to a multicast neighbouring device (with multicast routing protocols enabled).
By default, the dynamic routing interface learning function is enabled. You can use the no form of this command to disable this function and clear all routing interfaces learnt dynamically. With dynamic routing interface learning function disabled globally, the function of all vlans will be disabled. Beside, with this function enabled globally, if the function of specified vlan is disabled, the dynamic routing interface learning function of the corresponding vlan is disabled. When the source port check function is enabled, only the multicast flow enters from the routing interface is legal and it is forwarded to the registered interface by the multicast equipment, the multicast flow from the non routing interface is considered to be the illegal and is discarded. With the source port check function enabled, the dynamic routing interface learning function will improve the application flexibility of IGMP snooping.

Configuration Examples The following example demonstrates how to enable the dynamic routing interface learning function on the equipment:
Orion_B54Q(config)# ip igmp snooping mrouter learn pim-dvmrp

Related Commands

Command	Description
ip igmp snooping vlan mrouter learn pim-dvmrp	Enables the dynamic routing interface learning function on the multicast routing port.

9.14 ip igmp snooping preview

Allow the user to preview the specific multicast streams when the user doesn't have access to such multicast streams. Use **no** form of this command to disable multicast preview.
ip igmp snooping preview *profile-number*
no ip igmp snooping preview

Parameter Description

Parameter	Description
profile-number	Profile number (1-1024)

Defaults N/A

Command Global configuration mode

Usage Guide Apply the IGMP Profile to a multicast preview function. When the user doesn't have access to the multicast streams (namely the user might be filtered by IGMP Snooping filter), it can allow the user to preview partial contents. This function shall be used in conjunction with IGMP Snooping filter or multicast control in order to realize effective multicast preview.

Configuration Examples The following example associates the profile 1 to the 100M port 0/1 and associates multicast preview with profile 2:

```
Orion_B54Q(config)# ip igmp snooping preview 2
Orion_B54Q(config-if)# int fa 0/1
Orion_B54Q(config-if)# ip igmp snooping filter 1
```

Related Commands

Command	Description
ip igmp profile	Create a profile

Platform Description This command is supported higher than V10.4 (3).

9.15 ip igmp snooping preview interval

Use this command to configure the interval that allows the user to preview the specific multicast streams when the user doesn't have access to such multicast streams. Use **no** form of this command to restore the preview interval to the default value.

ip igmp snooping preview interval *num*

no ip igmp snooping preview interval

Parameter Description

Parameter	Description
num	Preview interval (1-300); default: 60 seconds.

Defaults The default value is 60 seconds.

Command Mode Global configuration mode

Usage Guide NA

Configuration Examples The following example sets the multicast preview interval as 100 seconds on the 100M port of 0/1:

```
Orion_B54Q(config)# ip igmp snooping preview interval 100
```

Related Commands	Command	Description
	ip igmp snooping preview	Enables the multicast preview.

Platform Description N/A

9.16 ip igmp snooping querier

To enable the IGMP querier function, execute "**ip igmp snooping querier**" global configuration command. Use **no** form of this command to disable IGMP querier in all VLANs and disable the global configurations.

ip igmp snooping querier

no ip igmp snooping querier

Parameter Description	Parameter	Description
	N/A	N/A

Defaults Disabled.

Command Mode Global configuration mode

Usage Guide After globally enabling the IGMP querier, you must enable the IGMP querier function in VLAN to affect this command.
If the IGMP querier function is disabled globally, the IGMP querier will be disabled in all VLANs.

Configuration Examples The following example enables the IGMP querier function on the device:

```
Orion_B54Q(config)# ip igmp snooping querier
```

Related Commands	Command	Description
	ip igmp snooping vlan querier	Enables the querier function in VLAN

Platform Description N/A

9.17 ip igmp snooping querier address

To enable the IGMP querier, you also need to specify a source IP address for query packets. Execute the global configuration command of "**ip igmp snooping querier address**". Use **no** form of this command to remove the source IP address configured.

ip igmp snooping querier address *a.b.c.d*
no ip igmp snooping querier address

Parameter Description

Parameter	Description
a.b.c.d	Source IP address of the query packets.

Defaults No source IP address is specified.

Command Mode Global configuration mode.

Usage Guide
After enabling IGMP querier, you also need to configure a source IP address for query packets, so that the device can send packets normally.
If no source IP address is specified in the VLAN needing to send packets, the device will verify whether the source IP address is specified globally. The device can only send query packets after finding the source IP configured, or else the querier function won't take effect.
If the IGMP querier source IP has been specified in VLAN, the source IP configured in the relevant VLAN will be used first.

Configuration Examples The following example specifies the source IP of query packets on the device:

```
Orion_B54Q(config)# ip igmp snooping querier address 1.1.1.1
```

Related Commands

Command	Description
ip igmp snooping vlan querier address	Enables the source IP check in VLAN

Platform Description N/A

9.18 ip igmp snooping querier max-response-time

To configure the maximum response time advertised in query packets, execute the global configuration command of "**ip igmp snooping querier max-response-time**". Use **no** form of this command to restore to the default value.
ip igmp snooping querier max-response-time *num*
no ip igmp snooping querier max-response-time

Parameter Description

Parameter	Description
num	Maximum response time (1-25); unit: second; default: 10

Defaults N/A

Command Mode Global configuration mode

Usage Guide Configure this command to specify the maximum response time to query packets.
By default, the maximum response time is 10 seconds. If the maximum response time has been specified in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example specifies the maximum response time to query packets on the device:

```
Orion_B54Q(config)# ip igmp snooping querier max-response-time 15
```

Related Commands

Command	Description
ip igmp snooping vlan querier *max-response-time*	Configures the maximum response time to query packets in VLAN

Platform Description N/A

9.19 ip igmp snooping querier query-interval

To specify the interval for IGMP querier to send query packets, execute the global configuration command of "**ip igmp snooping querier query-interval**". Use **no** form of this command to restore the query interval to the default value.
ip igmp snooping querier query-interval *num*
no ip igmp snooping querier query-interval

Parameter Description

Parameter	Description
num	Query interval (1-18000); unit: second; default: 60 seconds

Defaults N/A

Command Mode Global configuration mode

Usage Guide After globally enabling IGMP querier, the timer will be enabled for sending query packets periodically. The aging time of the timer is the query interval. Configure this command to change the query interval.
If the query interval has been configured in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example configures the query interval on the device:

```
Orion_B54Q(config)# ip igmp snooping querier query-interval 100
```

Related Commands	Command	Description
	ip igmp snooping vlan querier query-interval	Configures the query interval in VLAN

Platform Description N/A

9.20 ip igmp snooping querier timer expiry

To specify the expiration timer for non-querier, execute the global configuration command of "**ip igmp snooping querier timer expiry**". Use **no** form of this command to restore to the default value.

ip igmp snooping querier timer expiry *num*

no ip igmp snooping querier timer expiry

Parameter Description	Parameter	Description
	num	Non-querier expiration timer (60-300); unit: second; default: 125 seconds

Defaults N/A

Command Mode Global configuration mode

Usage Guide After globally enabling IGMP querier, if the device is elected as a non-querier, execute this command to change the expiration timer for non-querier.
If expiration timer has been configured in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example configures the non-querier expiration timer on the device:

```
Orion_B54Q(config)# ip igmp snooping querier timer expiry 60
```

Related Commands	Command	Description
	ip igmp snooping vlan querier timer expiry	Configures querier expiration timer in VLAN

Platform Description N/A

9.21 ip igmp snooping querier version

Use the following commands to specify IGMP Snooping querier version.

ip igmp snooping [**vlan** *vid*] **querier version 1**
ip igmp snooping [**vlan** *vid*] **querier version 2**
ip igmp snooping [**vlan** *vid*] **querier version 3**
Use **no** or **default** form of this command to restore to the default setting.
no ip igmp snooping [**vlan** *vid*] **querier version**
default ip igmp snooping [**vlan** *vid*] **querier version**

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Default The default version is IGMPv2.

Command Mode Global configuration mode

Usage Guide If an IGMP querier version has been configured in a VLAN, the version specified in the VLAN will be used first.

Configuration Examples The following example configures IGMP querier version on the device.

```
Orion_B54Q(config)# ip igmp snooping querier version 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.22 ip igmp snooping query-max-response-time

This command specifies the time for the switch to wait for the member join message after receiving the **query** message. If the switch does not receive the member join message within the specified time, it considers that the member has left and then deletes the member.
ip igmp snooping query-max-response-time *time*
no ip igmp snooping query-max-resposne-time

Parameter Description

Parameter	Description
time	The aging time of the routing inerface that the switch learns dynamically.

Defaults 10s

Command Mode	Global configuration mode
Usage Guide	You can specify the time for the switch to wait for the member join message after receiving the query message. If the switch does not receive the member join message in the specified time, it considers that the member has left and then deletes the member. This command lets you adjust the waiting time after receiving the query message. This command takes effect only after the switch receives the next member join message. This command does not change the current wait time.
Configuration Examples	Set the aging time of the routing interface that the switch learns dynamically to 100s. `Orion_B54Q(config)# ip igmp snooping query-max-response-time 100`

Related Commands	**Command**	**Function**
	ip igmp snooping	Configures a multicast routing interface.

9.23 ip igmp snooping source-check default-server

The source IP address check is used to permit one or several IPMC flows from the server of the specified IP address. To configure the source IP address check function of IGMP snooping, execute the **ip igmp snooping source-check default-server** command in the global configuration mode. The **no** form of this command is used to disable the source IP address check function.

ip igmp snooping source-check default-server *address*

no ip igmp snooping souce-check

Parameter Description	**Parameter**	**Description**
	address	Default multicast source IP address (IP address of the default multicast server)

Defaults	Disabled.
Command Mode	Global configuration mode.
Usage Guide	The source IP address check function takes effect globally. Once it is enabled, only the IPMC streams from the specified IP address are permitted. The device allows users to configure the source IP address of all IPMC streams, called default multicast server. The default server must be set as long as the source IP address check function is enabled.
Configuration	The following example enables the multicast source IP address check function and configure a

Examples default source IP address.

```
Orion_B54Q(config)# ip igmp snooping source-check default-server
192.168.4.243
```

Related Commands	**Command**	**Description**
	Ip igmp snooping limit-ipmc vlan server	Adds an entry to the source IP check table.

9.24 ip igmp snooping source-check port

The source port check function is used to permit one or several IPMC flows from the mroute port.
To configure the source port check function of IGMP snooping, execute the **ip igmp snooping source-check port** command in the global configuration mode. The no form of this command is used to disable the source port check function.
ip igmp snooping source-check port
no ip igmp snooping source-check port

Parameter Description N/A.

Defaults Disabled.

Command Mode Global configuration mode.

Usage Guide The source port check function takes effect globally. Once it is enabled, only the IPMC streams from the specified port are permitted.

Configuration Examples The following example enables the source port check function of IGMP snooping.

```
Orion_B54Q(config)# ip igmp snooping source-check port
```

Related Commands	**Command**	**Description**
	Ip igmp snooping source-check default-server	Enables the multicast source IP address check function.

9.25 ip igmp snooping suppression enable

To enable IGMP snooping suppression, execute the **ip igmp snooping suppression enable** command in the global configuration mode.The **no** form of this command is used to disable IGMP snooping suppression..
ip igmp snooping suppression enable
no ip igmp snooping suppression enable

Parameter Description	N/A
Defaults	Disabled
Command Mode	Global configuration mode.
Usage Guide	After you execute this command to enable the suppression function, the switch begins to suppress the IGMP v1/v2 report messages.
Configuration Examples	The following example enables IGMP snooping suppression on the device: `Orion_B54Q(config)# ip igmp snooping suppression`
Related Commands	N/A

9.26 ip igmp snooping svgl profile

To specify the multicast group address range applied in the SVGL/IVGL-SVGL mode, execute the **ip igmp snooping profile** *profile-number* command in the global configuration mode. Use the **no ip igmp snooping profile** command to cancel the association.

ip igmp snooping profile *profile-number*

no ip igmp snooping profile

Parameter Description	**Parameter**	**Description**
	profile-number	Profile number, in the range of 1-65535.

Default	No profile is associated.
Command Mode	Global configuration mode.
Usage Guide	When the IGMP Snooping works in the SVGL or IVGL-SVGL mode, a profile shall be associated to specify the multicast group address range applied in the SVGL or IVGL-SVGL mode. That is to say, the member ports of the multicast forwarding entry can be forwarded across the VLANs while the member ports of the multicast forwarding entry in the other multicast address range must belong to the same VLAN. By default, no profile is associated.

Configuration

```
Orion_B54Q(config)# ip igmp snooping svgl profile 1
```

Related Commands

Command	Description
ip igmp snooping ivgl	Enables igmp snooping and enter the IVGL mode.
ip igmp snooping ivgl-svgl	Enables igmp snooping and enter the hybrid mode.

9.27 ip igmp snooping svgl subvlan

To specify the subvlan of multicast VLAN, execute the global configuration command of "**ip igmp snooping svgl subvlan**". Use **no** form of this command to remove this configuration.

ip igmp snooping svgl subvlan [*vid-range*]

no ip igmp snooping svgl subvlan [*vid-range*]

Parameter Description

Parameter	Description
vid-range	VLAN ID or range of VLAN ID

Defaults

By default, no subvlan is specified for svgl, and all VLANs serve as its subvlans.

Command Mode

Global configuration mode.

Usage Guide

This command only takes effect in SVGL or IVGL-SVGL mode.

Configuration Examples

The following example configures the device operating in igmp snooping svgl mode to associate VLAN 2, 5, 6 and 7:

```
Orion_B54Q(config)# ip igmp snooping svgl vlan 2,5-7
```

Related Commands

Command	Description
ip igmp snooping svgl	Enables the igmp snooping and configure the svgl mode.
ip igmp snooping ivgl-svgl	Enables the igmp snooping and configure the IVGL-SVGL mode.
ip igmp snooping svgl vlan	Configures the primary VLAN of SVGL mode.

Platform Description

N/A

9.28 ip igmp snooping svgl vlan

To specify the vlan as the shared vlan in the SVGL mode, execute the **ip igmp snooping svgl vlan** command in the global configuration mode. The **no** form of this command restores the Shared VLAN to vlan 1..

ip igmp snooping svgl vlan *vid*
no ip igmp snooping svgl vlan

Parameter Description	**Parameter**	**Description**
	vid	VLAN ID.

Defaults By default , the shared vlan is vlan1.

Command Mode Global configuration mode.

Usage Guide This command only works in the SVGL or IVGL-SVGL mode.

Configuration Examples The following example specifies the vlan2 as the shared vlan

```
Orion_B54Q(config)# ip igmp snooping svgl vlan 2
```

Related Commands	**Command**	**Description**
	ip igmp snooping svgl	Enable igmp snooping and enter the SVGL mode.
	ip igmp snooping ivgl-svgl	Enable igmp snooping and enter the hybrid mode

9.29 ip igmp snooping tunnel

Configure the relationship between IGMP Snooping and QinQ:
ip igmp snooping tunnel
no ip igmp snooping tunnel

Parameter Description	**Parameter**	**Description**
	N/A	N/A

Defaults IGMP Passthrough is disabled.

Command Mode Global configuration mode.

Usage Guide After IGMP Snooping is enabled and dot1q-tunnel port is configured on the device, IGMP packets received from dot1q-tunnel port will be handled in two ways through IGMP Snooping:

- 1st way: Create multicast entries in the VLAN to which the IMGP packets belong, and forward IMGP packets in such VLAN.

  For example: It is assumed that IGMP Snooping has been enabled on the device; port A is a

dot1q-tunnel port; the default VLAN of port A is VLAN 1, and packets from VLAN 1 and VLAN 10 can pass through port A. When multicast requests of VLAN 10 are sent to port A, IGMP Snooping will create the multicast entry of VLAN 10 and forward the multicast requests to the router port of VLAN 10.

- 2nd way: Create multicast entries in the default VLAN to which the dot1q-tunnel ports belong, and forward multicast packets in the default VLAN of dot1q-tunnel port after inserting the VLAN Tag of the default VLAN of dot1q-tunnel port.

  For example: It is assumed that IGMP Snooping has been enabled on the device; port A is a dot1q-tunnel port; the default VLAN of port A is VLAN 1, and packets from VLAN 1 and VLAN 10 can pass through port A. When multicast requests of VLAN 10 are sent to port A, IGMP Snooping will create the multicast entry of VLAN 1 and insert the VLAN Tag of VLAN 1 into multicast requests before forwarding the multicast requests to the router port of VLAN 1.

By default, the 2nd way is used.

Configuration Examples The following example enables the IGMP packets transparent transmission on the device:

```
Orion_B54Q(config)# ip igmp snooping tunnel
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.30 ip igmp snooping vlan

Use this command to enable the igmp snooping on the specified vlan and enter the ivgl mode.
The **no** form of this command is used to disable the igmp snooping.
ip igmp snooping vlan *vid*
no ip igmp snooping vlan *vid*

Parameter Description

Parameter	Description
vid	VLAN ID

Defaults Disabled

Command Mode Global configuration mode.

Usage Guide Use this command to enable or disable the IGMP snooping on the specified vlan.

⚠ The pim snooping on the specified vlan works only when the igmp snooping configured. When disabling the igmp snooping on the vlan with the pim snooping configured, it prompts to disable the pim snooping first and this execution fails.

Configuration Examples The following example enables the igmp snooping on the vlan2.

```
Orion_B54Q(config)# ip igmp snooping vlan 2
```

Related Commands

Command	Description
ip igmp snooping ivgl	Enables the igmp and enter the ivgl mode.
ip igmp snooping ivgl-svgl	Enables the igmp snooping and enter the ivgl-svgl mode.

9.31 ip igmp snooping vlan mrouter interface

Routing interface is a port through which a multicast device is directly connected to a multicast neighbouring device. To configure a multicast routing interface, execute the **ip igmp snooping vlan mrouter interface** command in the global configuration mode. The **no** form of this command is used to delete a routing interface.

ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

no ip igmp snooping vlan *vid* **mrouter interface** *interface-id*

Parameter Description

Parameter	Description
vid	VLAN ID of a routing interface
interface-id	Interface ID

Defaults N/A

Command Mode Global configuration mode

Usage Guide When the source port check function is enabled, only the multicast flows from the routing interface are forwarded, and other flows will be discarded.

Configuration Examples The following example demonstrates how to configure a multicast routing interface on the equipment:

```
Orion_B54Q(config)# ip igmp snooping vlan 1 mrout erinterface fastEthernet
0/1
```

Related Commands

Command	Description
ip igmp snooping source-check port	Enables the multicast source port check function.

9.32 ip igmp snooping vlan static interface

Once IGMP snooping is enabled, a port can receive a certain multicast frame without being afftected by various IGMP messges by executing the **ip igmp snooping vlan static interface** command in the global configuration mode. The **no** form of this command is used to delete a static configuration.

ip igmp snooping vlan *vid* **static** ip-addr **interface** *interface-id*

no ip igmp snooping vlan *vid* **static** *ip-addr* **interface** *interface-id*

Parameter Description

Parameter	Description
vid	VLAN ID of a routing interface
ip-addr	Multicast IP address
interface-id	Interface ID

Defaults N/A

Command Mode Global configuration mode

Usage Guide Multiple multicast IP addresses can be configured for an interface.

Configuration Examples The following example demonstrates how to configure a static multicast address on a port:

```
Orion_B54Q(config)# ip igmp snooping vlan 1 static 224.1.1.1 interface GigabitEthernet 0/1
```

Related Commands

Command	Description
ip igmp snooping vlan mdevice interface	Configures a multicast routing interface

9.33 permit

To permit the forwarding of the multicast streams in the range specified by the profile, execute the **permit** command in the profile configuration mode. In this way, the interface associated with this profile will forward the specified multicast stream only.

Permit

Parameter Description N/A

Defaults The forwarding of the multicast streams in the range specified by the profile is denied.

Command Profile configuration mode

Usage Guide First, configure the multicast range using the range command in the profile configuration mode. In addition, the profile must be applied to the interface in order to make the profile configuration to take effective.

Configuration Examples The following is an example of allowing the forwarding of the multicast stream 224.2.2.2:

```
Orion_B54Q(config)# ip igmp profile 1
Orion_B54Q(config-profile)# range 224.2.2.2
Orion_B54Q(config-profile)# permit
```

Related Commands

Command	Description
ip igmp profile	Creates a profile.
range	Configures the multicast address range.

9.34 range

To specify the range of multicast streams, execute the **range** command in the profile configuration mode. You can specify either a single multicast address or a range of multicast addresses. Use the **no** form of the command to remove the specified multicast IP address.

range *low-ip-address* [*high-ip-address*]

no range *low-ip-address* [*high-ip-address*]

Parameter Description

Parameter	Description
low-ip-address	Start address of a range
high-ip-address	End address of a range

Defaults N/A

Command Mode Profile configuration mode

Usage Guide You can specify a behavior after configuring the address range, for example deny by default. In addition, the profile must be applied to the interface in order to make the profile configuration take effect.

Configuration Examples The following is an example of creating a profile whose multicast stream is in the range 224.2.2.2 to 224.2.2.244:

```
Orion_B54Q(config)# ip igmp profile 1
Orion_B54Q(config-profile)# range 224.2.2.2 224.2.2.244
```

Related Commands

Command	Description
ip igmp profile	Creates a profile.
deny	Denies the forwarding of the multicast streams in the range specified by the profile.
permit	Permits the forwarding of the multicast streams in the range specified by the profile.

9.35 show ip igmp profile

Use this command to show the profile information.

show ip igmp profile

show ip igmp profile *profile-number*

Parameter Description

Parameter	Description
none	Displays configuration information of all profiles.
profile-number	Displays configuration information of the designated profile.

Command Mode

Privileged EXEC mode

Configuration Examples

```
Orion_B54Q(config-if)# show ip igmp profile
Profile 1
Permit
range 224.0.1.0, 239.255.255.255
```

9.36 show ip igmp snooping

Use this command to show related information of igmp snooping.

show ip igmp snooping [**gda-table** | **interfaces** *interface-type interface-number* | **mdevice**| **statistics** [**vlan** *vlan-id*] | **querier** [**detail | vlan** *vid*] | **user-info**]

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By defualt, IGMP Snooping information of all VLANs are displayed.
interface-type interface-number	Interface type and number

Command Mode

Privileged EXEC mode

Configuration Examples

The following example displays global IGMP Snooping information.

```
Orion_B54Q#show ip igmp snooping
IGMP Snooping running mode: IVGL
IGMP Snooping L2-entry-limit: 65536
Source port check: Disable
Source ip check: Disable
IGMP Fast-Leave: Disable
IGMP Report suppress: Disable
IGMP Globle Querier: Disable
IGMP Preview: Disable
IGMP Tunnel: Disable
IGMP Snooping version: 2IGMP Preview group aging time : 60(Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
Dynamic Host Aging Time : 260(Seconds)
The following example displays VLAN1 IGMP Snooping
information.Orion_B54Q#show ip igmp snooping vlan 1
IGMP Snooping running mode: IVGL
IGMP Snooping L2-entry-limit: 65536
Global IGMPv2 Fast-Leave :Disable
Global multicast router learning mode :Enable
Query Max Respone Time: 10 (Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
Dynamic Host Aging Time : 260(Seconds)

vlan 1
-------------
IGMP Snooping state: Enable
Multicast router learning mode: pim-dvmrp
IGMP Fast-Leave: Disable
IGMP VLAN querier: Disable
IGMP VLAN Mode: STATIC
```

10 MLD Snooping Commands

10.1 clear ipv6 mld snooping gda-table

Use this command to clear the forwarding table information learned dynamically.

clear ipv6 mld snooping gda-table

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to clear the forwarding table information learned dynamically.

Configuration Examples The following example clears the forwarding table information learned dynamically:

```
Orion_B54Q# clear ipv6 mld snooping gda-table
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.2 clear ipv6 mld snooping statistics

Use this command to clear the MLD Snooping statistics, including the entry number, the entry volume, the number of various received packets, the group information and the interface information of the corresponding group.

clear ipv6 mld snooping statistics

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide

Configuration Examples The following example clears the MLD Snooping statistics.

```
Orion_B54Q# clear ipv6 mld snooping statistics
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.3 deny

Use this command to prevent the multicast flow profile within the specified range from being forwarded in the profile configuration mode.

deny

Parameter Description

Parameter	Description
N/A	N/A

Defaults The default profile action is **deny**.

Command Mode Profile configuration mode

Usage Guide Before configuring this command, use the **range** command to set the multicast range first.

Configuration Examples The following example prevents the multicast flow profile within the range of FF77::100 from being forwarded.

```
Orion_B54Q(config)# ipv6 mld profile 1
Orion_B54Q(config-profile)# range FF77::100
Orion_B54Q(config-profile)# deny
```

Related Commands

Command	Description
ipv6 mld profile	Creates one profile.
range	Sets the multicast address range.
permit	Sets the profile action permit.

Platform Description N/A

10.4 ipv6 mld profile

Use the following command to create a profile. Use the **no** or **default** form of this command to delete a profile.

ipv6 mld profile *profile-number*

no ipv6 mld profile *profile-number*

default ipv6 mld profile *profile-number*

Parameter Description

Parameter	Description
profile-number	Profile number, in the range from 1 to 1024.

Defaults N/A

Command Mode Global configuration mode

Usage Guide Profile is a kind of group “filter” that can be referred to by other functions.

Configuration Steps:

1. Use the **ipv6mld profile** command to create a profile and enter the profile mode.
2. Use the **range** command to define a group.
3. Use the **permit** command to allow this group to pass the filtering; Use the **deny** command to filter the packets of this group. The default command is **deny**.

Configuration Examples The following example creates profile 1 and allows the packets sent by devices with MAC address ranging from FF15::1 to FF15::100 to pass the filtering.

```
Orion_B54Q(config)#ipv6 mld profile 1
Orion_B54Q(config-profile)#range FF15::1 FF15::100
Orion_B54Q(config-profile)#permit
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.5 ipv6 mld snooping

Use this command to enable MLD Snooping and specify IVGL/SVGL/IVGL-SVGL mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping {**ivgl | svgl | ivgl-svgl**}

no ipv6 mld snooping [**ivgl** | **svgl** | **ivgl-svgl]**

default ipv6 mld snooping [**ivgl** | **svgl** | **ivgl-svgl**]

Parameter Description

Parameter	Description
ivgl	MLD Snooping is running IVGL mode.
svgl	MLD Snooping is running SVGL mode.
ivgl-svgl	MLD Snooping is running IVGL-SVGL mode.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide

- In IVGL mode, multicast flow in each VLAN is independent. The host only requests multicast flow from the routing interface within the same VLAN. The device forwards the multicast flow from any VLAN to the member port within the same VLAN.
- In SVGL mode, multicast flow is shared among VLANs. The host can request multicast flow across VLANs. Shared VLAN (VLAN 1 by default) should be specified. Only multicast flow from Shared VLAN can be forwarded to all member ports within the group address range, which may belong to different VLANs. Profile is used to specify a group range for SVGL. Only multicast flow within this range can be forwarded across VLANs. The other multicast flow is discarded.
- In IVGL-SVGL mode, Profile is used to specify a group range for SVGL. Multicast flow within this range is in SVGL mode and the other multicast flow is in IVGL mode.

Configuration Examples The following example enables MLD Snooping IVGL mode.

```
Orion_B54Q(config)# ip igmp snooping ivgl
```

The following example enables MLD Snooping SVGL mode and specifies the shared VLAN and SVGL group range as VLAN1 and profile1 respectively.

```
Orion_B54Q(config)# ip igmp snooping svgl
Orion_B54Q(config)# ip igmp snooping svgl profile 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.6 ipv6 mld snooping dyn-mr-aging-time

Use this command to set the aging time of the dynamic multicast route port. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping dyn-mr-aging-time *time*

no ipv6 mld snooping dyn-mr-aging-time

default ipv6 mld snooping dyn-mr-aging-time

Parameter Description

Parameter	Description
time	Sets the aging time of the dynamic multicast route port, in the range from 1 to 3600 in the unit of seconds.

Defaults The default is 300.

Command Mode Global configuration mode.

Usage Guide The switch will remove the dynamic multicast router interface from the router interface list if it fails to receive the MLD general group query packets or the Ipv6 PIM Hello packets within the aging timeout on this interface.

Configuration Examples The following example sets the aging time of the dynamic multicast route port to 500 seconds.

```
Orion_B54Q(config)# ipv6 mld snooping dyn-mr-aging-time 500
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.7 ipv6 mld snooping fast-leave enable

Use this command to enable the MLD Snooping fast-leave in the global configuration mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping fast-leave enable

no ipv6 mld snooping fast-leave enable

default ipv6 mld snooping fast-leave enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide The interface fast leave is that when IPv6 MLD Leave packets sent from the host are received on an interface, the interface is removed form the outgoing interface list of the corresponding forwarding entry. Then, the switch will not forward the received IPv6 MLD specific group query packets to the

interface. If there is only one receiver connected with the interface, enable the interface fast leave function to save the bandwidth and resources.

Configuration Examples The following example enables mld snooping fast-leave.

```
Orion_B54Q(config-if)# ipv6 mld snooping fast-leave
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.8 ipv6 mld snooping filter

Use this command to filter the specific multicast flow in the interface configuration mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping filter *profile-number*

no ipv6 mld snooping filter

default ipv6 mld snooping filter

Parameter Description

Parameter	Description
profile-number	Sets the profile number in the range from 1 to 1024.

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide You can configure an MLD Profile on an interface. If the MLD Report packets are received on the interface, the layer-2 device will determine whether the multicast address to be joined the interface is within the allowed range of the MLD Profile. The specified profile must be created before using this command.

Configuration Examples The following example associates profile1 with the interface fastEthernet 0/1.

```
Orion_B54Q(config)# interface fastEthernet 0/1
Orion_B54Q(config-if)# ipv6 mld snooping filter 1
```

Related Commands

Command	Description
ipv6 mld profile	Creates a profile.

Platform Description N/A

10.9 ipv6 mld snooping host-aging-time

Use this command to set the aging time of the dynamic member port.
Use the **no** form of this command to cancel this configuration.
Use the **default** form of this command to restore the aging time to the default setting.
ipv6 mld snooping host-aging-time *seconds*
no ipv6 mld snooping host-aging-time
default ipv6 mld snooping host-aging-time

Parameter Description

Parameter	Description
seconds	Sets the aging time of the dynamic member port, in seconds, ranging from 1-65536 in the unit of seconds.

Defaults The default aging time of the dynamic member port is 260 seconds.

Command Mode Global configuration mode

Usage Guide The switch will remove the dynamic multicast router interface from the router interface list if it fails to receive the MLD general group query packets or the IPv6 PIM Hello packets within the aging timeout on this interface.
When the MLD Snooping is enabled, the port that receives the MLD Report packet will learn to be a dynamic member port. The default aging time of such dynamic member port is 260 seconds. You can use this command to adjust the aging time. This configuration takes effect after the port receives the the next Report packet. The aging time of the dynamic member port should be longer than the query interval.

Configuration Examples The following example shows how to sets the aging time of the dynamic member port to 200 seconds:

```
Orion_B54Q(config)# ipv6 mld snooping host-aging-time 200
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.10 ipv6 mld snooping max-groups

Use this command to set the maximum group allowed to join the interface dynamically in the interface configuration mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping max-groups *number*
no ipv6 mld snooping max-groups
default ipv6 mld snooping max-groups

Parameter Description

Parameter	Description
number	The number of groups, in the range from 0 to 65536

Defaults The default is 65536.

Command Mode Interface configuration mode

Usage Guide With this command configured, when the group number exceeds the specified range on the interface, the switch will not receive and deal with the MLD Report packets.

Configuration Examples The following example sets the maximum 100 multicast group on the interface fastEthernet 0/1.

```
Orion_B54Q(config)# interface fastEthernet 0/1
Orion_B54Q(config-if)# ipv6 mld snooping max-group 100
```

Related Commands

Command	Description
ipv6 mld snooping filter	Filters the multicast group on the interface.

Platform Description N/A

10.11 Ipv6 mld snooping mrouter learn

Use this command to enable the switch to dynamically learn MLD query or PIM packets to identify the mrouter interface automatically. Use the **no** form of this command to disable this function. Use the **default** form of this command to restore the default setting.
ipv6 mld snooping [**vlan** *vid*] **mrouter learn**
no ipv6 mld snooping [**vlan** *vid*] **mrouter learn**
default ipv6 mld snooping [**vlan** *vid*] **mrouter learn**

Parameter Description

Parameter	Description
vlan *vid*	The vlan ID, in the range from 1 to 4094.

Defaults This function is enabled by default.

Command Mode Global configuration mode

Usage Guide The mrouter interface is the interface of the multicast device connected with the peer device. By

default, the dynamically-learned mroute interface is enabled on the layer-2 multicast device. Use the **no** option to disable this function and clear all dynamically-learned mroute interfaces.

- With the source port check enabled, only the multicast flow through the mroute interface are valid and forwarded to the registered interface on the layer-2 multicast device. Those multicast flow through the non-mroute interface are invalid and will be discarded.

Configuration Examples The following example enables the dynamic multicast route port learn function for VLAN1.

```
Orion_B54Q(config)# no ipv6 mld snooping mrouter learn
Orion_B54Q(config)# ipv6 mld snooping vlan 1 mrouter learn
```

Related Commands N/A

10.12 ipv6 mld snooping query-max-response-time

Use this command to set t the maximum response time of the MLD general query packet. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping query-max-response-time *seconds*

no ipv6 mld snooping query-max-response-time

default ipv6 mld snooping query-max-response-time

Parameter Description

Parameter	Description
seconds	Sets the maximum response time of the MLD general query packet in the range from 1 to 65535 in the unit of seconds.

Defaults The default is 10 seconds.

Command Mode Interface configuration mode

Usage Guide Upon receiving the MLD general query packets, the Layer-2 multicast device updates the aging timer of all member ports. The time of the timer is the longest response value. When the timer value decreases to 0, it indicates that there is no member receiving the multicast flow on the interface, and the Layer-2 device removes this interface from the MLD Snooping forwarding list.

Upon receiving the MLD specific group query packets, the Layer-2 multicast device enables the aging timer of all member ports in this specific group. The time of the timer is the longest response value. When the timer value decreases to 0, it indicates that there is no member receiving the multicast flow on the interface, and the Layer-2 device removes this interface from the MLD Snooping forwarding list.

For the source query packets of the MLD specific group, the timer is not updated.

The configured maximum response time

Configuratio The following example sets the maximum response time of the MLD general query packet to 15

n Examples seconds.

```
Orion_B54Q(config)# ipv6 mld snooping query-max-response-time 15
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.13 ipv6 mld snooping source-check port

The source-check port is used to allow the multicast flow to enter through the mrouter interface. Use this command to enable the mld source-check port in the global configuration mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping source-check port

no ipv6 mld snooping source-check port

default ipv6 mld snooping source-check port

Parameter Description

Parameter	Description
N/A	N/A

Defaults The source-check port is disabled by default.

Command Mode Global configuration mode

Usage Guide The MLD Snooping source port check function is to limit the MLD multicast flow through the interace strictly. With the source port check disabled, all video flow are illegal and forwarded to the registered member port according to the MLD Snooping forwarding list. With the MLD Snooping source port check enabled, only the mulitcast flow through the mroute interface is legal and forwarded to the registered interface by the layer-2 multicast device; and the multicast flow through the non-mroute interface are illegal and discarded.

This command is used to enabled the source port check globally. Once this function is enabld, all multicast flow must come from the mroute interface, or they'll be discarded.

Configuration Examples The following example shows how to enable MLD Snooping source-check port:

```
Orion_B54Q(config-if)# ipv6 mld snooping source-check port
```

Related Commands

Command	Description
N/A	N/A

Platform N/A

Description

10.14 ipv6 mld snooping suppression enable

Use this command to enable the MLD Snooping suppression in the global configuration mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping suppression enable

no ipv6 mld snooping suppression enable

default ipv6 mld snooping suppression enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults The MLD Snooping suppression function is disabled by default.

Command Mode Global configuration mode.

Usage Guide With the IPv6 MLD Snooping suppression function enabled, within the query interval, the layer-2 device will only forward the first received MLD Report packet in an IPv6 multicast group to the layer-3 device, but not the other MLD Report packets in the same IPv6 multicast group, reducing the packet number in the network.

This command is used to enable the IPv6 MLD Snooping suppression, and only the MLDv1 Report packets are suppressed rather than the MLDv2 Report packets.

Configuration Examples The following example enables MLD Snooping suppression.

```
Orion_B54Q(config-if)# ipv6 mld snooping suppression
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.15 ipv6 mld snooping svgl profile

Use this command to specify the group address range to be in the SVGL mode. Use the **no** or **default** form of this command to restore the default setting.

ipv6 mld snooping svgl profile *profile-number*

no ipv6 mld snooping svgl profile

default ipv6 mld snooping svgl profile

Parameter Description

Parameter	Description
profile-number	Sets the profile number, in the range from 1 to 1024.

Defaults No profiles are associated with svgl by default.

Command Mode Global configuration mode

Usage Guide With the SVGL mode or IVGL-SVGL mode configured for the MLD Snooping working mode, a profile shall be associated with the IVGL for the purpose of specifying the group address range in the SVGL mode. That is to say, the member port of the multicast forwarding entry can be forwarded across the VLANs, while the member ports of the corresponding multicast forwarding entries within other multicast address range must belong to the same VLAN. By default, no profile is associated, which means that apply no multicast group in the SVGL mode.

Configuration Examples The following example specifies the SVGL mode application range as the profie1 group address range.

```
Orion_B54Q(config)# ipv6 mld snooping svgl profile 1
```

Related Commands

Command	Description
ipv6 mld snooping ivgl	Enables the MLD Snooping and set the ivgl mode.
ipv6 mld snooping ivgl-svgl	Enables the MLD Snooping and set the ivgl-svgl mode.

Platform Description N/A

10.16 ipv6 mld snooping svgl vlan

Use this command to specify the shared VLAN in MLD Snooping SVGL mode.
Use the **no** or **default** form of this command to restore the default setting.
ipv6 mld snooping svgl vlan *vid*
no ipv6 mld snooping svgl vlan
default ipv6 mld snooping svgl vlan

Parameter Description

Parameter	Description
vid	The VLAN ID, in the range from 1 to 4094.

Defaults The default is 1.

Command Global configuration mode

Mode

Usage Guide This command is used to specify the SVGL shared VLAN if MLD Snooping is running in SVGL or IVGL-SVGL mode.

Configuration Examples The following example sets the shared VLAN in MLD Snooping SVGL mode to 5.

```
Orion_B54Q(config)# ipv6 mld snooping svgl vlan 5
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.17 ipv6 mld snooping vlan

Use this command to enable the MLD Snooping function for the specified VLAN. Use the **no** form of this command to disable this function. Use the default form of this command to restore the default setting.

ipv6 mld snooping vlan *vid*

no ipv6 mld snooping vlan *vid*

default ipv6 mld snooping vlan *vid*

Parameter Description

Parameter	Description
vid	The VLAN ID, in the range from 1 to 4094.

Defaults The MLD Snooping function is enabled by default.

Command Mode Global configuration mode

Usage Guide By default, the MLD Snooping is enabled in all VLANs. You can disable the MLD Snooping for the specified VLAN.

Configuration Examples The following example disables the MLD Snooping function in vlan1:

```
Orion_B54Q(config)# no ipv6 mld snooping vlan 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.18 ipv6 mld snooping vlan mrouter interface

Use this command to set the static mrouter interface.

Use the **no** form of this command to restore the default setting.

ipv6 mld snooping vlan *vid* **mrouter interface** *interface-type interface-number*

no ipv6 mld snooping vlan *vid* **mrouter interface** *interface-type interface-number*

default ipv6 mld snooping vlan *vid* **mrouter interface** *interface-type interface-number*

Parameter Description

Parameter	Description
vid	The VLAN ID, in the range from 1 to 4094.
interface-type interface-number	The interface number

Defaults No static mrouter interface is configured by default.

Command Mode Global configuration mode

Usage Guide Use this command to set the static mrouter interface for the purpose that all IPv6 multicast data received on the switch can be forwarded. With the source port check function enabled, only the multicast flow through the mroute interface can be forwarded.

Configuration Examples The following example sets a multicast routing port:

```
Orion_B54Q(config)# ipv6 mld snooping vlan 1 mrouter interface
fastEthernet 0/1
```

Related Commands

Command	Description
ipv6 mld snooping source-check port	Sets the multicast source port check.

Platform Description N/A

10.19 ipv6 mld snooping vlan mrouter learn

Use this command to enable the switch to dynamically learn MLD query or PIM packets to identify the mrouter interface automatically. Use the **no** form of this command to disable this function.

ipv6 mld snooping vlan *vid* **mrouter learn**

no ipv6 mld snooping vlan *vid* **mrouter learn**

Parameter Description

Parameter	Description
vid	The vlan id, in the range from 1 to 4094. The default is 1.

Defaults This function is enabled by default.

Command Mode Global configuration mode.

Usage Guide The mrouter interface is the interface of the multicast device connected with the peer device. By default, the dynamically-learned mroute interface is enabled on the layer-2 multicast device. Use the **no** option to disable this function and clear all dynamically-learned mroute interfaces. With the source port check enabled, only the multicast flow through the mroute interface are valid and forwarded to the registered interface on the layer-2 multicast device. Those multicast flow through the non-mroute interface are invalid and will be discarded. With the source port check function enabled, use the dynamically-learned mroute interfaces to improve the mld snooping flexibility.

Configuration Examples The following example enables the dynamic multicast route port learn function.

```
Orion_B54Q(config)# ipv6 mld snooping vlan 1 mrouter learn
```

Related Commands

Command	Description
ipv6 mld snooping vlan mrouter interface	Sets the mrouter interface.

Platform Description N/A

10.20 ipv6 mld snooping vlan static interface

Use this command to set a static member port to receive the multicast flow for the purpose of preventing the port from being influenced by the MLD Report packets with the MLD Snooping enabled. Uses the **no** form of this command to restore the default setting.

ipv6 mld snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

no ipv6 mld snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

Parameter Description

Parameter	Description
vid	The vlan id, in the range from 1 to 4094. The default is 1.
group-address	The multicast address
interface-type interface-number	The interface number

Defaults No static member port is configured by default.

Command Mode Global configuration mode

Usage Guide Use this command to set the interface as the member port of multiple static multicast addresses.

Configuration Examples The following example sets the interface fastEthernet 0/1 as the static member port of the FF88::1 group.

```
Orion_B54Q(config)# ipv6 mld snooping vlan 1 static FF88::1 interface fastEthernet 0/1
```

Related Commands

Command	Description
ipv6 mld snooping vlan mrouter interface	Sets the mrouter interface.

Platform Description N/A

10.21 permit

Use this command to allow the multicast flow profile within the specified range in the profile configuration mode.

permit

Parameter Description

Parameter	Description
N/A	N/A

Defaults The default profile action is **deny**.

Command Mode Profile configuration mode

Usage Guide Before configuring this command, use the **range** command to set the multicast range first.

Configuration Examples The following example allows the multicast flow profile within the range of FF77::1 to be forwarded only:

```
Orion_B54Q(config)# ipv6 mld profile 1
Orion_B54Q(config-profile)# range FF77::1
Orion_B54Q(config-profile)# permit
```

Related Commands

Command	Description
ipv6 mld profile	Creates one profile.
range	Sets the multicast address range.
deny	Sets the profile action deny.

Platform Description N/A

10.22 range

Use this command to specify the profile multicast flow range, which can be one single multicast address, or can be the multicast address within the specified range when configuring a profile in the profile configuration mode.

range *low-ipv6-address* [*high-ip-address*]

Parameter Description

Parameter	Description
low-ip-address	The low address within the specified range
high-ip-address	The high address within the specified range

Defaults No range is defined by default.

Command Mode Profile configuration mode

Usage Guide The value of low-ipv6-address shall be smaller than the one of high-ipv6-address. With the address range configured, an action shall be specified, and the default profile action is deny.

Configuration Examples The following example creates the multicast flow profile within the range of FF77::1~FF77::100.

```
Orion_B54Q(config)# ipv6 mld profile 1
Orion_B54Q(config-profile)# range FF77::1 FF77::100
```

Related Commands

Command	Description
ipv6 mld profile	Creates one profile.
deny	Sets the profile action deny.
permit	Sets the profile action permit.

Platform Description N/A

10.23 show ipv6 mld profile

Use this command to display the related MLD profile configuration.

show ipv6 mld profile *profile-number*

Parameter Description

Parameter	Description
profile-number	Displays the configuration of the specified profile.

Defaults N/A

Command Privileged EXEC mode/Global configuration mode/Interface configuration mode

Mode

Usage Guide Use this command to display the related MLD profile configuration.

Configuration Examples The following example displays the MLD profile configuration.

```
Orion_B54Q# show ipv6 mld profile 1
MLD Profile 1
permit
range FF77::1 FF77::100
range FF88::123
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.24 show ipv6 mld snooping

Use this command to display the related MLD Snooping information.

show ipv6 mld snooping [**gda-table** | **interfaces** *interface-type interface-number* | **mrouter** | **statistics**[**vlan** *vid*] | **vlan** *vid*]

Parameter Description

Parameter	Description
gda-table	Displays the multicast forwarding rule table.
Interfaces *interface-type interface-number*	Displays the MLD Snooping filtering configuration.
mrouter	Displays the information about mrouter interface.
statistics	Displays the MLD Snooping statistics.
vlan *vlan-id*	Displays the MLD Snooping information of the specified vlan.

Defaults N/A

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide Use this command to display the related MLD Snooping information.

Configuration Examples The following example displays the MLD Snooping configurations using the **show ipv6 mld snooping** command:

```
Orion_B54Q# show ipv6 mld snooping
MLD-snooping mode       : IVGL
```

```
SVGL vlan-id             : 1
SVGL profile number     : 0
Source check port       : Disabled
Query max respone time : 10(Seconds)
```

The following example displays the mrouter interface of the MLD Snooping using the **show ipv6 mld snooping statistics** command:

```
Orion_B54Q# show ipv6 mld snooping statistics
GROUP   Interface  Last report    Last leave      Last
                            time       time          reporter
------------------------- ------------ -------------
FF88::1 VL1:Gi4/2    0d:0h:0m:7s      ----     2003::1111
                          Report pkts: 1         Leave pkts: 0
```

The following example displays the mrouter interface of the MLD Snooping using the **show ipv6 mld snooping mrouter** command:

```
Orion_B54Q# show ipv6 mld snooping mrouter
Vlan    Interface        State      MLD profile number
----      --------          -------      -------------------
1   GigabitEthernet 0/7    static         1
1   GigabitEthernet 0/12   dynamic        0
```

The following example displays the multicast group information in the GDA table and all member ports information of one multicast group:

```
Orion_B54Q# show ipv6 mld snooping gda-table
Abbr: M - mrouter
      D - dynamic
      S - static
VLAN  Address              Member ports
-----------------------------------------------------------
1       FF88::1           GigabitEthernet 0/7(S)
```

The following example displays the MLD Snooping filtering configuration using the **show ipv6 mld snooping mrouter** command:

```
Orion_B54Q# show ipv6 mld snooping interface GigabitEthernet 0/7
Interface          Filter Profile number      max-groups
----------        ----------------------     -----------
GigabitEthernet 0/7            1                 4294967294
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A