

1 IPv6 Multicast Route Management Commands

Command	Function
clear ipv6 mroute	Clear IPv6 multicast hardware forwarding entries.
clear ipv6 mroute statistics	Clear statistics about the IPv6 multicast hardware forwarding entries.
ipv6 mroute	Configure an IPv6 static multicast route.
ipv6 multicast boundary	Configure an IPv6 multicast border for a specified IPv6 group.
ipv6 multicast route-limit	Configure the maximum number of entries in an IPv6 multicast routing table.
ipv6 multicast-routing	Enable the IPv6 multicast routing function.
ipv6 multicast rpf longest-match	Enable the function of RPF route selection based on the longest match rule.
ipv6 multicast static	Enable the multicast stream L2 direction control function.
msf6 force-forwarding	Enable the function of forced forwarding of IPv6 multicast packets (destined for the CPU) by software.
msf6 nsf	Enable the nonstop forwarding (NSF) function.
show ipv6 mroute	Display IPv6 multicast hardware forwarding entries.
show ipv6 mroute count	Display the count of IPv6 multicast routing entries.
show ipv6 mroute sparse	Display PIM-SMv6 multicast core entries.
show ipv6 mroute static	Display the IPv6 static multicast routing information.
show ipv6 mroute summary	Display the summary information of IPv6 multicast routing entries.
show ipv6 mvif	Display IPv6 multicast interface information.
show ipv6 rpf	Display the RPF information about a specific IPv6 source address.
show ipv6 mrf6 mfc	Display IPv6 multicast routing entries.
show msf6 msc	Display IPv6 L2/L3 multicast hardware forwarding

	entries.
show msf6 nsf	Display IPv6 multicast NSF configuration.

1.1 clear ipv6 mroute

Function

Run the **clear ipv6 mroute** command to clear IPv6 multicast hardware forwarding entries.

Syntax

```
clear ipv6 mroute { * | ipv6-group-address [ ipv6-source-address ] }
```

Parameter Description

*: Clears all IPv6 multicast routing entries.

ipv6-group-address: Address of an IPv6 multicast group for IPv6 multicast routing.

ipv6-source-address: Address of an IPv6 multicast source for IPv6 multicast routing.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

If the multicast function fails, you can run this command to clear the current IPv6 multicast routing information to facilitate problem locating and re-learn entries.

Examples

The following example clears all the IPv6 multicast routing entries.

```
Hostname> enable
Hostname# clear ipv6 mroute *
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.2 clear ipv6 mroute statistics

Function

Run the **clear ipv6 mroute statistics** command to clear statistics about the IPv6 multicast hardware forwarding entries.

Syntax

```
clear ipv6 mroute statistics { * | ipv6-group-address [ ipv6-source-address ] }
```

Parameter Description

*: Specifies all IPv6 multicast routing entries.

ipv6-group-address: Address of an IPv6 multicast group for IPv6 multicast routing.

ipv6-source-address: Address of an IPv6 multicast source for IPv6 multicast routing.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

If the multicast function fails, you can run this command to clear the current multicast routing statistics to facilitate problem locating and re-collect information.

Examples

The following example clears statistics about all the IPv6 multicast routing entries.

```
Hostname> enable
Hostname# clear ipv6 mroute statistics *
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.3 ipv6 mroute

Function

Run the **ipv6 mroute** command to configure an IPv6 static multicast route.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No IPv6 static multicast route is configured by default.

Syntax

```
ipv6 mroute ipv6-address/prefix-length [ protocol ] { ipv6-rpf-address | interface-type interface-number } [ distance ]
```

```
no ipv6 mroute ipv6-address/prefix-length [ protocol ]
```

```
default ipv6 mroute ipv6-address/prefix-length [ protocol ]
```

Parameter Description

ipv6-address: IPv6 address of a multicast source.

prefix-length: Mask of the IPv6 address of a multicast source.

protocol: Unicast routing protocol being used.

ipv6-rpf-address: IPv6 address of an RPF neighbor (next hop to the multicast source).

interface-type interface-number: RPF interface (outbound interface to the multicast source).

distance: Route administrative distance. The value range is from 0 to 255, and the default value is 0.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

A static multicast route is used for only RPF check, and specifies an RPF neighbor or interface for multicast packets from a specific source. A static multicast route is applied in mainly the following two scenarios:

- Modify an RPF route

If a multicast device expects to receive multicast packets from a source through a specified interface but this specified interface is not the RPF interface, you can configure a static multicast route to specify this interface as an RPF interface.

- Connect an RPF route

If two adjacent devices in a network are configured with different routing protocols, and the routes are not mutually introduced, the unicast route is interrupted. The devices cannot forward packets because no RPF route is available. In this case, you can configure a static multicast route to specify the RPF interface to complete the RPF check and implement multicast packet forwarding.

To specify an outbound interface rather than a next-hop IP address for the IPv6 static multicast route, ensure that the outbound interface is of the point-to-point type.

Examples

The following example configures an IPv6 static multicast route, and sets the network address of the IPv6 multicast to 2233::/64 and the outbound interface address of this multicast source to 3333::3333.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 mroute 2233::/64 3333::3333
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 mroute static](#)

1.4 ipv6 multicast boundary

Function

Run the **ipv6 multicast boundary** command to configure an IPv6 multicast border for a specified IPv6 group.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No IPv6 multicast border is configured by default.

Syntax

```
ipv6 multicast boundary acl-name [ in | out ]
```

```
no ipv6 multicast boundary acl-name [ in | out ]
```

```
default ipv6 multicast boundary acl-name [ in | out ]
```

Parameter Description

acl-name: ACL name used to define the address range of a multicast group. The value is a case-sensitive string of 1 to 99 characters.

in: Indicates that the multicast border takes effect in the inbound direction of the multicast stream.

out: Indicates that the multicast border takes effect in the outbound direction of the multicast stream.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

The ACL used in this command is a standard ACL. If an extended ACL is used, the filtering result is inaccurate.

This command can be used to filter MLD and PIM-SMv6 protocol packets relevant to the IPv6 multicast group range. Multicast data streams are not sent or received by this multicast border interface.

Examples

The following example configures an IPv6 multicast border for all IPv6 multicast groups (mul-boun) on the VLAN interface SVI 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 access-list mul-boun
Hostname(config-std-nacl)# permit ipv6 ::/0 ::/0
Hostname(config-std-nacl)# exit
Hostname(config)# interface vlan 1
Hostname(config-if)# ipv6 multicast boundary mul-boun
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.5 ipv6 multicast route-limit

Function

Run the **ipv6 multicast route-limit** command to configure the maximum number of entries in an IPv6 multicast routing table.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

By default, a maximum of 4000 entries can be added to an IPv6 multicast routing table.

Syntax

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

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

```
default ipv6 multicast route-limit limit [ threshold ]
```

Parameter Description

limit: Maximum number of entries in an IPv6 multicast routing table. The value range is from 1 to 64000.

threshold: A threshold that triggers an alarm if the number of IPv6 multicast routes reaches this threshold. The value range is from 1 to 64000, and the default value is **64000**.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Due to limitations by hardware resources, routing entries that exceed the range permitted by hardware must be forwarded by software, which causes performance to decrease.

The configured value of *threshold* must be smaller than or equal to the configured value of *limit*.

Examples

The following example sets the maximum number of entries that can be added to an IPv6 multicast routing table to 100 and sets the threshold to 90.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 multicast route-limit 100 90
```

Notifications

When the configured value of threshold is greater than the limit, the following notification will be displayed:

```
Hostname# enable
Hostname# configure terminal
Hostname(config)# ipv6 multicast route-limit 400 4000
% Route threshold exceeds configured route limit
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 mroute count](#)

1.6 ipv6 multicast-routing

Function

Run the **ipv6 multicast-routing** command to enable the IPv6 multicast routing function.

Run the **no** form of this command to disable this function.

Run the **default** form of this command to restore the default configuration.

The IPv6 multicast routing function is disabled by default.

Syntax

ipv6 multicast-routing

no ipv6 multicast-routing

default ipv6 multicast-routing

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

The IPv6 multicast routing function must be enabled prior to different IPv6 multicast protocols.

The IPv6 multicast routing function and the MLD Snooping function are mutually exclusive.

Examples

The following example enables the IPv6 multicast routing function.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 multicast-routing
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.7 ipv6 multicast rpf longest-match

Function

Run the **ipv6 multicast rpf longest-match** command to enable the function of RPF route selection based on the longest match rule.

Run the **no** form of this command to select the route with the highest priority as the RPF route.

Run the **default** form of this command to restore the default configuration.

By default, the route with the highest priority is selected as the RPF route. If the routes have the same priority, the RPF route is selected in the order of IPv6 static multicast route, IPv6 MBGP route and IPv6 unicast route.

Syntax**ipv6 multicast rpf longest-match****no ipv6 multicast rpf longest-match**

default ipv6 multicast rpf longest-match**Parameter Description**

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

The steps for selecting an RPF route are as follows:

- (1) Select one optimal route used for the RPF check from each of the IPv6 static multicast routing table, IPv6 MBGP routing table and IPv6 unicast routing table. Select one route out of the three optimal routes as the RPF route.
- (2) If the command for selecting the RPF route based the longest match rule is configured, the route with the longest match is selected out of the three optimal routes as the RPF route. If the three routes share the same subnet mask, the route with the highest priority is selected. If the routes have the same priority, the RPF route is selected in the order of IPv6 static multicast route, IPv6 MBGP route, and IPv6 unicast route.
- (3) If the longest match rule is not used, the route with the highest priority is selected as the RPF route. If the routes have the same priority, the RPF route is selected in the order of IPv6 static multicast route, IPv6 MBGP route, and IPv6 unicast route.

Examples

The following example enables the function of RPF route selection based on the longest match rule.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 multicast rpf longest-match
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [ipv6 multicast-routing](#)

1.8 ipv6 multicast static

Function

Run the **ipv6 multicast static** command to enable the multicast stream L2 direction control function.

Run the **no** form of this command to disable this function.

Run the **default** form of this command to restore the default configuration.

L2 direction control is disabled for multicast streams by default.

Syntax

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

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

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

Parameter Description

ipv6-source -address: Address of a multicast source.

ipv6-group-address: Address of a multicast group.

interface-type interface-number: L2 interface that is allowed to forward the multicast stream.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Multiple commands can be configured for a specified multicast stream so that the stream can be forwarded by multiple interfaces. After direction control is enabled for a multicast stream, this stream can be forwarded only by these configured interfaces. Other interfaces are not permitted to forward the stream.

This command controls only the forwarding of multicast streams on interfaces, but does not directly affect the processing of multicast protocols on the protocol packets. Some features of multicast protocols (such as PIM-SMv6) are driven by multicast data streams, and therefore, the behavior of the multicast routing protocols may still be affected.

Examples

The following example enables the L2 direction control function for the multicast stream with the source address 2222::3333 and the group address FF66::100, and allows the stream to be forwarded through GigabitEthernet 0/1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 multicast static 2222::3333 ff66::100 gigabitethernet 0/1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.9 msf6 force-forwarding

Function

Run the **msf6 force-forwarding** command to enable the function of forced forwarding of IPv6 multicast packets (destined for the CPU) by software.

Run the **no** form of this command to disable this function.

Run the **default** form of this command to restore the default configuration.

The function of forced forwarding of IPv6 multicast packets (destined for the CPU) by software is disabled by default.

Syntax

msf6 force-forwarding

no msf6 force-forwarding

default msf6 force-forwarding

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example enables the function of forced forwarding of IPv6 multicast packets (destined for the CPU) by software.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# msf6 force-forwarding
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.10 msf6 nsf

Function

Run the **msf6 nsf** command to enable the nonstop forwarding (NSF) function.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The NSF function is not enabled by default.

Syntax

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

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

```
default msf6 nsf { convergence-time | leak }
```

Parameter Description

convergence-time *convergence-time*: Specifies the maximum convergence time of a multicast protocol, in seconds. The value range is from 0 to 3600, and the default value is **20**.

leak *interval*: Specifies the packet leak time during multicasting, in seconds. The value range is from 0 to 3600, and the default value is **30**.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After the management board on a device with multiple management boards is switched over, the multicast protocol, for example, PIM-SMv6 or MLD Snooping, takes some time to complete convergence. The NSF parameters are configured to ensure nonstop forwarding of multicast data streams during re-convergence of the multicast protocol.

Examples

The following example enables the NSF function and sets the maximum convergence time of a multicast protocol to 300 seconds and the packet leak time during multicasting to 200 seconds.

```
Hostname> enable
Hostname# configure terminal
Hostname (config)# msf6 nsf convergence-time 300
Hostname (config)# msf6 nsf leak 200
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show msf6 nsf](#)

1.11 show ipv6 mroute

Function

Run the **show ipv6 mroute** command to display IPv6 multicast hardware forwarding entries.

Syntax

```
show ipv6 mroute [ ipv6-group-or-source-address [ ipv6-group-or-source-address ] ]
```

Parameter Description

ipv6-group-or-source-address: Address of an IPv6 group or source.

ipv6-group-or-source-address: Address of an IPv6 group or source (the two addresses cannot be both group addresses or both source addresses).

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays all multicast routing entries.

```
Hostname> enable
Hostname# 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
```

Table 1-1 Output Fields of the show ipv6 mroute Command

Field	Description
Flags	I: Collect immediately. T: Collect as scheduled. F: Set to the hardware forwarding table.
Timers:Uptime/Stat Expiry	The creation time and aging time of this entry.
Interface State	Interface state.
Owner	Owner of this entry, which may be a multicast routing protocol.
Incoming interface	Expected packet inbound interface. If it is inconsistent with the actual inbound interface, the packet is discarded.
Outgoing interface list	Outbound interface list. Packets are forwarded through the interface in the linked list.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.12 show ipv6 mroute count

Function

Run the **show ipv6 mroute count** command to display the count of IPv6 multicast routing entries.

Syntax

```
show ipv6 mroute count
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the count of IPv6 multicast routing entries.

```

Hostname> enable
Hostname# show ipv6 mroute count
IPv6 Multicast Statistics
Total 1 routes using 168 bytes memory
Route limit/Route threshold: 1024/2147483647
Total NOCACHE/WRONGVIF/WHOLEPKT rcv 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 rcv/Reg NACK rcv/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 rcv
Client msg counts: WRONGVIF/WHOLEPKT/Imm Stat/Timed Stat sent
Reg pkt counts: Reg ACK rcv/Reg NACK rcv/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

```

Table 1-1 Output Fields of the show ipv6 mroute count Command

Field	Description
Total <i>total-route-number</i> routes using <i>memory-size</i> bytes memory	The total number of routes specified by <i>total-route-number</i> occupies <i>memory-size</i> bytes.
Route limit/Route threshold	The maximum number of routes/maximum number of configurable routes.
Total NOCACHE/WRONGmif/WHOLEPKT rcv from fwd	Number of received unparsed packets/packets through incorrect interfaces/known multicast packets
Total NOCACHE/WRONGmif/WHOLEPKT sent to clients	Number of unparsed packets sent to clients
Immediate/Timed stat updates sent to clients	Number of instantly/scheduled updated packets sent to clients
Reg ACK rcv/Reg NACK rcv/Reg pkt sent	Number of received registration acknowledged packets/received registration unacknowledged packets/sent register packets
Next stats poll	Next status update time

Field	Description
Forwarding Counts: Pkt count/Byte count, Other Counts: Wrong If pkts	Number of software forwarded packets: Number of packets/Number of bytes Number of other packets: Packets forwarded through incorrect interfaces
Fwd msg counts: WRONGmif/WHOLEPKT recv	Number of forwarded packets: Packets forwarded through incorrect interfaces/Known multicast packets
Client msg counts: WRONGmif/WHOLEPKT/Imm Stat/Timed Stat sent	Number of client packets: Packets forwarded through incorrect interfaces/Known multicast packets/instantly updated packets/scheduled updated packets
Reg pkt counts: Reg ACK recv/Reg NACK recv/Reg pkt sent	Number of registration packets: Received registration acknowledged packets/received registration unacknowledged packets/sent register packets

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.13 show ipv6 mroute sparse

Function

Run the **show ipv6 mroute sparse** command to display PIM-SMv6 multicast core entries.

Syntax

```
show ipv6 mroute sparse
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays PIM-SMv6 multicast core entries.

```

Hostname> enable
Hostname# show ipv6 mroute sparse

IPv6 Multicast Routing Table
Flags: I - Immediate Stat, T - Timed Stat, F - Forwarder installed,
       R - RPT, S - SPT, s - SSM Group
Timers: Uptime/Stat Expiry
Interface State: Interface

```

Table 1-1 Output Fields of the show ipv6 mroute sparse Command

Field	Description
Flags	<p>I- Collect immediately.</p> <p>T- Collect as scheduled.</p> <p>F- Set to the hardware forwarding table.</p>
Timers:Uptime/Stat Expiry	The creation time and aging time of this entry.
Interface State	Interface state.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.14 show ipv6 mroute static**Function**

Run the **show ipv6 mroute static** command to display the IPv6 static multicast routing information.

Syntax

```
show ipv6 mroute static
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the configured static multicast routing information.

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

Table 1-1 Output Fields of the show ipv6 mroute static Command

Field	Description
Mroute	Multicast route.
RPF neighbor	RPF neighbor.
Protocol	Protocol.
distance	Administrative distance.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.15 show ipv6 mroute summary

Function

Run the **show ipv6 mroute summary** command to display the summary information of IPv6 multicast routing entries.

Syntax

```
show ipv6 mroute summary
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays summary information of routing entries.

```

Hostname> enable
Hostname# 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

```

Table 1-1 Output Fields of the show ipv6 mroute summary Command

Field	Description
Flags	<p>I- Collect immediately.</p> <p>T- Collect as scheduled.</p> <p>F- Set to the hardware forwarding table.</p>
Timers:Uptime/Stat Expiry	The creation time and aging time of this entry.
Interface State	Interface state.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.16 show ipv6 mvif**Function**

Run the **show ipv6 mvif** command to display IPv6 multicast interface information.

Syntax

```
show ipv6 mvif [ interface-type interface-number ]
```

Parameter Description

interface-type interface-number: Interface type and interface number. If this parameter is not specified, all IPv6 multicast interface information is displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command displays the configured IPv6 multicast interface information that takes effect.

Examples

The following example displays the configured IPv6 multicast interface information that takes effect.

```

Hostname> enable
Hostname# show ipv6 mvif
Interface      Mif   Owner      Uptime
                Idx   Module
Register       0
VLAN 1         1     PIMSMV6    03d03h09m

```

Table 1-1 Output Fields of the show ipv6 mvif Command

Field	Description
Interface	Interface.
Mif Idx	Index of a multicast interface.
Owner Module	Module name.
Uptime	Start time.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.17 show ipv6 rpf

Function

Run the **show ipv6 rpf** command to display the RPF information about a specific IPv6 source address.

Syntax

```
show ipv6 rpf ipv6-source-address
```

Parameter Description

ipv6-source-address: Address of an IPv6 multicast source.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the RPF information about the multicast source 2222::3333.

```
Hostname> enable
Hostname# 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
```

Table 1-1 Output Fields of the `show ipv6 rpf` Command

Field	Description
RPF interface	RPF interface.
RPF neighbor	RPF neighbor.
RPF route	RPF route.
RPF type	RPF type.
RPF recursion count	RPF recursion count.
Distance	Administrative distance.
Metric	Metric.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.18 show ipv6 mrf6 mfc

Function

Run the `show ipv6 mrf6 mfc` command to display IPv6 multicast routing entries.

Syntax

```
show ipv6 mrf6 mfc [ ipv6-source-address ipv6-group-address ]
```

Parameter Description

ipv6-source-address: Source address in an IPv6 multicast routing entry.

ipv6-group-address: Group address in an IPv6 multicast routing entry.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

The two parameters are optional, and the source address and group address must be specified simultaneously.

When no source address or group address is specified, all multicast forwarding cache (MFC) entries are displayed.

When the source address and group address are specified, the MFC entries corresponding to the source address and group address are displayed.

Examples

The following example displays the IPv6 L3 multicast hardware forwarding entries with the source address 2001::1.

```

Hostname> enable
Hostname# show ipv6 mrf6 mfc 2001::1 ff06::1
Multicast Routing Forward Cache6 Table
(2001::1, ff06::1)
  FAST_SW, SWITCHED, MIN_MTU: 1500, MIN_MTU_IFINDEX: 4099, WRONG IF: 0
  Incoming interface: VLAN 1[4097]
  Outgoing interface list:
VLAN 3 (1)

```

Table 1-1 Output Fields of the show ipv6 mrf6 mfc Command

Field	Description
<i>(source-address, group-address)</i>	(Source address, group address)
FAST_SW	Flag that indicates whether the entry supports fast forward. If non-Ethernet interface, PPP interface, HDLC interface or frame relay interface exists, no fast forwarded entry is generated.
SWITCHED	Whether an entry is delivered to next-layer hardware forwarding table.
MIN_MTU MTU	Minimum MTU value of an entry.
MIN_MTU_IFINDEX	Index of an interface that has the minimum MTU value.
WRONG IF	Statistics about the multicast data packets from incorrect interfaces.
Incoming interface: <i>interface-type interface-number [lsm-ifx]</i>	RPF inbound interface of entries. <ul style="list-style-type: none"> ● <i>interface-type interface-number</i>: Interface type and interface number. ● <i>lsm-ifx</i>: Index of an LSM interface.
Outgoing interface list: <i>interface-type interface-number (ttl)</i>	L3 outbound interface of entries. <ul style="list-style-type: none"> ● <i>interface-type interface-number</i>: Interface type and interface number. ● <i>ttl</i>: TTL threshold of this L3 interface.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.19 show msf6 msc

Function

Run the **show msf6 msc** command to display IPv6 L2/L3 multicast hardware forwarding entries.

Syntax

```
show msf6 msc [ ipv6-source-address ] [ ipv6-group-address ] [ vlan-id ]
```

Parameter Description

ipv6-source-address: IPv6 source address in an L2/L3 multicast hardware forwarding entry.

ipv6-group-address: IPv6 group address in an L2/L3 multicast hardware forwarding entry.

vlan-id: ID of a VLAN to which L2/L3 multicast hardware forwarding entry belongs. When this value is greater than 4096, the interface is a routed port.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

The three parameters are optional.

- When only the source address is specified as S1, all MSC entries corresponding to the source address S1 are displayed.
- When the source address is specified as S1 and the group address is specified as G1, all MSC entries corresponding to the source address S1 and group address G1 are displayed.
- When the source address is specified as S1, the group address is specified as G1, and the VLAN ID is specified as V1, all MSC entries corresponding to the source address S1, group address G1, and VLAN ID V1 are displayed.

The parameters must be set in order, and a next parameter can be set only when the preceding parameter is set.

If no parameter is specified, all IPv6 L2/L3 multicast hardware forwarding entries are displayed.

Examples

The following example displays the IPv6 L3 multicast hardware forwarding entries with the source address 2012::16:1:0:2.

```

Hostname> enable
Hostname# show msf6 msc 2012::16:1:0:0:2
Multicast Switching Cache Table
(2012::16:1:0:0:2, FF1E::2:0:0:1, 4103), HIT, SYNC, MTU:9216, RP_SUP, 2 OIFs
  VLAN 4103(7): 1 OPORTs, FULL, REQ: DONE
    OPORT 7, ROUTER, REQ: DONE
  VLAN 4139(43): 1 OPORTs, FULL, REQ: DONE
    OPORT 43, ROUTER, REQ: DONE

```

Table 1-1 Output Fields of the show msf6 msc Command

Field	Description
(Ipv6-source-address, ipv6-source-address, ipv6-group-address, vlan-id)	(Source address, group address, VLAN ID) Example: (2012::16:1:0:0:2, FF1E::2:0:0:1, 4103)
SYNC	Indicates that the entry is synchronized to the bottom-layer hardware.
MTU	MTU value of an entry.
number OIFs	Number of L3 outbound interfaces in an entry
VLAN vlan-id(0)	ID of a VLAN to which an L3 outbound interface belongs. When this value is greater than 4096, the interface is a routed port.
oport-number OPORTs	Number of L2 ports that belong to this L3 outbound interface
REQ: DONE	Indicates that this L3 outbound interface has been set to the bottom-layer hardware.
OPORT oport-index	Index to the L2 ports that belong to this L3 outbound interface.
MLD-SNP	Indicates that this port is created based on the MLD Snooping protocol. If this value is ROUTER, this port is created based on an L3 protocol.
REQ: DONE	Indicates that this port has been set to the bottom-layer hardware.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.20 show msf6 nsf**Function**

Run the **show msf6 nsf** command to display IPv6 multicast NSF configuration.

Syntax

```
show msf6 nsf
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays multicast NSF configuration.

```

Hostname> enable
Hostname# show msf6 nsf
Multicast HA Parameters
-----+
protocol convergence timeout          20 secs
flow leak interval                    30 secs

```

Table 1-1 Output Fields of the show msf6 nsf Command

Field	Description
protocol convergence timeout	Maximum period for multicast protocol convergence
flow leak interval	Packet leak time during multicasting

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A