Contents

IPv6 multicast routing and forwarding commands

display ipv6 mrib interface

Use **display ipv6 mrib interface** to display information about interfaces maintained by the IPv6 MRIB.

Syntax

display ipv6 mrib interface [*interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface-type interface-number: Specifies an interface by its type and number. If you do not specify an interface, this command displays information about all interfaces maintained by the IPv6 MRIB.

Examples

Display information about interfaces maintained by the IPv6 MRIB.

```
<Sysname> display ipv6 mrib interface
 Interface: Vlan-interface1
     Index: 0x00004444
     Current state: up
     MTU: 1500
     Type: BROADCAST
     Protocol: PIM-DM
     PIM protocol state: Enabled
     Address list:
         1. Local address : FE80:7:11::1/10
            Remote address: ::
            Reference     : 1
            State         : NORMAL
```

Table 1 Command output

Field	Description
Interface	Interface name.
Index	Index number of the interface.
Current state	Current status of the interface: up or down.
MTU	MTU value.
Type	Interface type: • **BROADCAST**—Broadcast link interface.

Field	Description
	- **LOOP**—Loopback interface. - **REGISTER**—Register interface. - **MTUNNEL**—Multicast tunnel interface. This field is empty if the interface is Null 0.
Protocol	Protocol running on the interface: PIM-DM, PIM-SM, MLD, or PROXY.
PIM protocol state	Whether IPv6 PIM is enabled: Enabled or Disabled.
Address list	Interface address list.
Local address	Local IP address.
Remote address	Remote end IP address. This field is displayed only when the interface is vlink type.
Reference	Number of times that the address has been used.
State	Status of the interface address: **NORMAL** or **DEL**.

display ipv6 multicast boundary

Use **display ipv6 multicast boundary** to display IPv6 multicast boundary information.

Syntax

display ipv6 multicast boundary { **group** [*ipv6-group-address* [*prefix-length*]] | **scope** [*scope-id*] } [**interface** *interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

group: Displays the IPv6 multicast boundary information for the specified groups.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F. If you do not specify an IPv6 multicast group, this command displays IPv6 multicast boundary information for all IPv6 multicast groups.

prefix-length: Specifies an address prefix length in the range of 8 to 128. The default is 128.

scope: Displays the IPv6 multicast group boundary information in the admin-scoped zone.

scope-id: Specifies an admin-scope zone by its ID in the range of 3 to 15, which is identified by the scope field in the IPv6 multicast group address. If you do not specify an admin-scoped zone, this command displays IPv6 multicast boundary information for all IPv6 admin-scoped zones.

interface *interface-type interface-number*: Specifies an interface by its type and number. If you do not specify an interface, this command displays IPv6 multicast boundary information for all interfaces.

Examples

Display IPv6 multicast boundary information of all IPv6 multicast groups for all interfaces.

```
<Sysname> display ipv6 multicast boundary group
```

```
    Boundary                                                  Interface
    FF1E::/64                                                 Vlan1
```
Display IPv6 multicast boundary information in all IPv6 admin-scope zones for all interfaces.
```
<Sysname> display ipv6 multicast boundary scope
 Boundary            Interface
        3            Vlan-interface1
```

Table 2 Command output

Field	Description
Boundary	IPv6 multicast group or IPv6 admin-scoped zone associated with the IPv6 multicast boundary.
Interface	Boundary interface associated with the IPv6 multicast boundary.

Related commands

ipv6 multicast boundary

display ipv6 multicast fast-forwarding cache

Use **display ipv6 multicast fast-forwarding cache** to display IPv6 multicast fast forwarding entries.

Syntax

display ipv6 multicast fast-forwarding cache [*ipv6-source-address* | *ipv6-group-address*] * [**slot** *slot-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address. The value range for this argument is FFxy::/16 (excluding FFx1::/16 and FFx2::/16), where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

slot *slot-number*: Specifies an IRF member device by its member ID. If you do not specify a member device, this command displays IPv6 multicast fast forwarding entries for the master device.

Examples

Display IPv6 multicast fast forwarding entries.
```
<Sysname> display ipv6 multicast fast-forwarding cache
Total 1 entries, 1 matched

(FE1F:60::200, FF0E::1)
Status     : Enabled
Source port: 2001                   Destination port: 2002
Protocol   : 2                      Flag          : 0x2
Incoming interface: Vlan-interface1
```

```
List of 1 outgoing interfaces:
Vlan-interface2
Status: Enabled            Flag: 0x14
```

Table 3 Command output

Field	Description
Total 1 entries, 1 matched	Total number of (S, G) entries, and the total number of matching (S, G) entries.
(FE1F:60::200, FF0E::1)	(S, G) entry.
Protocol	Protocol number.
Flag	Flag for the (S, G) entry or the outgoing interface of the entry. This field displays one flag or the sum of multiple flags. In this example, the value 0x2 means that the entry has only one flag 0x2. The value 0x14 means that the outgoing interface has flags 0x10 and 0x4. The following flags are available for an entry: • **0x1**—The entry is created because of packets passed through between cards. • **0x2**—The entry is added by IPv6 multicast forwarding. The following flags are available for an outgoing interface: • **0x1**—The interface is added to the entry because of packets passed through between cards. • **0x2**—The interface is added to an existing entry. • **0x4**—The MAC address of the interface is needed for fast forwarding. • **0x8**—The interface is an outgoing interface associated with the incoming VLAN or super VLAN interface. • **0x10**—The interface is associated with the entry. • **0x20**—The interface is to be deleted.
Status	Status of the (S, G) entry or the outgoing interface: • **Enabled**—Available. • **Disabled**—Unavailable.
Incoming interface	Incoming interface of the (S, G) entry.
List of 1 outgoing interfaces	Outgoing interface list of the (S, G) entry.

Related commands

reset ipv6 multicast fast-forwarding cache all

display ipv6 multicast forwarding event

Use **display ipv6 multicast forwarding event** to display statistics of IPv6 multicast forwarding events.

Syntax

display ipv6 multicast forwarding event [**slot** *slot-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

slot *slot-number*: Specifies an IRF member device by its member ID. If you do not specify a member device, this command displays statistics of IPv6 multicast forwarding events for the master device.

Examples

Display statistics of IPv6 multicast forwarding events.

```
<Sysname> display ipv6 multicast forwarding event
Total active events sent: 0
Total inactive events sent: 0
Total NoCache events sent: 2
Total NoCache events dropped: 0
Total WrongIF events sent: 0
Total WrongIF events dropped: 0
Total SPT switch events sent: 0
NoCache rate limit: 1024 packets/s
WrongIF rate limit: 1 packets/10s
Total timer of register suppress timeout: 0
```

Table 4 Command output

Field	Description
Total active events sent	Number of times that entry-active events have been sent.
Total inactive events sent	Number of times that entry-inactive events have been sent.
Total NoCache events sent	Number of times that NoCache events have been sent.
Total NoCache events dropped	Number of times that NoCache events have been dropped.
Total WrongIF events sent	Number of times that WrongIF events have been sent.
Total WrongIF events dropped	Number of times that WrongIF events have been dropped.
Total SPT switch events sent	Number of times that SPT-switch events have been sent.
NoCache rate limit	Rate limit for sending NoCache events, in pps.
WrongIF rate limit	Rate limit for sending WrongIF events, in packets per 10 seconds.
Total timer of register suppress timeout	Number of times that the registration suppression has timed out in total.

Related commands

reset ipv6 multicast forwarding event

display ipv6 multicast forwarding-table

Use **display ipv6 multicast forwarding-table** to display IPv6 multicast forwarding entries.

Syntax

display ipv6 multicast forwarding-table [*ipv6-source-address* [*prefix-length*] | *ipv6-group-address* [*prefix-length*] | **incoming-interface** *interface-type interface-number* | **outgoing-interface**

```
      { exclude | include | match } interface-type interface-number | slot
      slot-number | statistics ] *
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

prefix-length: Specifies an address prefix length. The default value is 128. For an IPv6 multicast group address, the value range for this argument is 8 to 128. For an IPv6 multicast source address, the value range for this argument is 0 to 128.

incoming-interface: Specifies the IPv6 forwarding entries that contain the specified incoming interface.

interface-type interface-number: Specifies an interface by its type and number.

outgoing-interface: Specifies the IPv6 forwarding entries that contain the specified outgoing interface.

exclude: Specifies the IPv6 forwarding entries that do not contain the specified interface in the outgoing interface list.

include: Specifies the IPv6 forwarding entries that contain the specified interface in the outgoing interface list.

match: Specifies the IPv6 forwarding entries that contain only the specified interface in the outgoing interface list.

slot *slot-number*: Specifies an IRF member device by its member ID. If you do not specify a member device, this command displays IPv6 multicast forwarding entries for the master device.

statistics: Displays statistics for the IPv6 multicast forwarding table.

Examples

Display IPv6 multicast forwarding entries.
```
<Sysname> display ipv6 multicast forwarding-table
Total 1 entries, 1 matched

00001. (1::1, ff0e::1)
     Flags: 0x0
     Uptime: 00:08:32, Timeout in: 00:03:26
     Incoming interface: Vlan-interface10
          Incoming sub-VLAN: VLAN 11
          Outgoing sub-VLAN: VLAN 12
                            VLAN 13
     List of 1 outgoing interface:
       1: Vlan-interface20
          Sub-VLAN: VLAN 21
                    VLAN 22
     Matched 19648 packets(20512512 bytes), Wrong If 0 packet
```

```
Forwarded 19648 packets(20512512 bytes)
```

Table 5 Command output

Field	Description
Total 1 entries, 1 matched	Total number of (S, G) entries, and the total number of matching (S, G) entries.
00001	Sequence number of the (S, G) entry.
(1::1, ff0e::1)	(S, G) entry.
Flags	Entry flag. This field displays one flag or the sum of multiple flags. In this example, the value 0x0 means that the entry has only one flag 0x0. The following flags are available for an entry: • **0x0**—The entry is in correct state. • **0x1**—The entry is in inactive state. • **0x2**—The entry is null. • **0x4**—The entry fails to update. • **0x8**—The outgoing interface information fails to update for the entry. • **0x20**—A register outgoing interface is available. • **0x40**—The entry is to be deleted. • **0x80**—The entry is in registration suppression state. • **0x100**—The entry is being deleted. • **0x200**—The entry is in GR state. • **0x400**—The entry has the VLAN interface of the super VLAN. • **0x800**—The entry has the associated ND entry for the IPv6 multicast source address. • **0x4000000**—The entry is created by the MLD proxy.
Uptime	Length of time for which the (S, G) entry has been up.
Timeout in	Length of time in which the (S, G) entry will time out.
Incoming interface	Incoming interface of the (S, G) entry.
Incoming sub-VLAN	Incoming sub-VLAN of the super VLAN when the incoming interface of the (S, G) entry is the VLAN interface of this super VLAN.
Outgoing sub-VLAN	Outgoing sub-VLAN of the super VLAN when the incoming interface of the (S, G) entry is the VLAN interface of this super VLAN.
List of 1 outgoing interfaces	Outgoing interface list of the (S, G) entry.
Sub-VLAN	Outgoing sub-VLAN of the super VLAN when the outgoing interface of the (S, G) entry is the VLAN interface of this super VLAN.
Matched 19648 packets (20512512 bytes), Wrong If 0 packet	Number of packets (bytes) that match the (S, G) entry, and number of packets with incoming interface errors. The numbers are displayed as 0 if an outgoing interface of the (S, G) entry is on the specified slot.
Forwarded 19648 packets (20512512 bytes)	Number of packets (bytes) that have been forwarded. The numbers are displayed as 0 if an outgoing interface of the (S, G) entry is on the specified slot.

reset ipv6 multicast forwarding-table

display ipv6 multicast routing-table

Use **display ipv6 multicast routing-table** to display IPv6 multicast routing entries.

Syntax

display ipv6 multicast routing-table [*ipv6-source-address* [*prefix-length*] | *ipv6-group-address* [*prefix-length*] | **incoming-interface** *interface-type interface-number* | **outgoing-interface** { **exclude** | **include** | **match** } *interface-type interface-number*] *

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

prefix-length: Specifies an address prefix length. The default is 128. For an IPv6 multicast group address, the value range for this argument is 8 to 128. For an IPv6 multicast source address, the value range for this argument is 0 to 128.

incoming-interface: Displays the IPv6 routing entries that contain the specified incoming interface.

interface-type interface-number: Specifies an interface by its type and number.

outgoing-interface: Displays the IPv6 routing entries that contain the specified outgoing interface.

exclude: Displays the IPv6 routing entries that do not contain the specified interface in the outgoing interface list.

include: Displays the IPv6 routing entries that contain the specified interface in the outgoing interface list.

match: Displays the IPv6 routing entries that contain only the specified interface in the outgoing interface list.

Usage guidelines

IPv6 multicast routing entries are the basis of IPv6 multicast forwarding. You can use this command to view the establishment state of (S, G) entries.

Examples

Display IPv6 multicast routing entries.

```
<Sysname> display ipv6 multicast routing-table
 Total 1 entries


 00001. (2001::2, FFE3::101)
      Uptime: 00:00:14
```

```
        Upstream Interface: Vlan-interface1
        List of 2 downstream interfaces
            1:   Vlan-interface2
            2:   Vlan-interface3
```

Table 6 Command output

Field	Description
Total 1 entries	Total number of (S, G) entries.
00001	Sequence number of the (S, G) entry.
(2001::2, FFE3::101)	(S, G) entry.
Uptime	Length of time for which the (S, G) entry has been up.
Upstream Interface	Upstream interface at which the (S, G) packets should arrive.
List of 2 downstream interfaces	List of downstream interfaces that forward (S, G) packets.

Related commands

reset ipv6 multicast routing-table

display ipv6 multicast rpf-info

Use **display ipv6 multicast rpf-info** to display RPF information for an IPv6 multicast source.

Syntax

display   ipv6   multicast   rpf-info *ipv6-source-address* [*ipv6-group-address*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16 (excluding FFx1::/16 and FFx2::/16), where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

Examples

Display RPF information for IPv6 multicast source 2001::101.

```
<Sysname> display ipv6 multicast rpf-info 2001::101
 RPF information about source 2001::101:
    RPF interface: Vlan-interface1, RPF neighbor: FE80::A01:101:1
    Referenced prefix/prefix length: 2001::/64
    Referenced route type: igp
    Route selection rule: preference-preferred
    Load splitting rule: disable
```

Table 7 Command output

Field	Description
RPF information about source 2001::101	RPF information of the IPv6 multicast source 2001::101.
RPF interface	Type and number of the RPF interface.
RPF neighbor	IPv6 address (link-local address) of the RPF neighbor.
Referenced prefix/prefix length	Referenced route and its prefix length.
Referenced route type	Type of the referenced route: • **igp**—IPv6 IGP unicast route. • **egp**—IPv6 EGP unicast route. • **unicast (direct)** —IPv6 directly connected unicast route. • **unicast**—Other IPv6 unicast route, such as IPv6 unicast static route. • **mbgp**—IPv6 MBGP route.
Route selection rule	RPF route selection rule: • Route preference. • Longest prefix match.
Load splitting rule	Whether load splitting is enabled.

Related commands

```
display ipv6 multicast forwarding-table
display ipv6 multicast routing-table
```

ipv6 mtrace-service port

Use **ipv6 mtrace-service port** to specify the UDP port number used by IPv6 mtrace.

Use **undo ipv6 mtrace-service port** to restore the default.

Syntax

```
ipv6 mtrace-service port number
undo ipv6 mtrace-service port
```

Default

IPv6 mtrace uses UDP port number 10240.

Views

System view

Predefined user roles

network-admin

Parameters

number: Specifies a UDP port number to be used by IPv6 mtrace, in the range of 1024 to 49151.

Usage guidelines

For successful IPv6 mtrace, do not specify a UDP port number used by other modules.

You must specify the same UDP port number on all devices on the traced path. Additionally, the specified UDP port number must be the same as that specified in the **mtrace v2** command.

Examples

Specify 12345 as the UDP port number used by IPv6 mtrace.

```
<Sysname> system-interview
[sysname] ipv6 mtrace-service port 12345
```

Related commands

mtrace v2 ipv6

ipv6 multicast boundary

Use **ipv6 multicast boundary** to configure an IPv6 multicast forwarding boundary.

Use **undo ipv6 multicast boundary** to delete an IPv6 multicast forwarding boundary.

Syntax

ipv6 multicast boundary { *ipv6-group-address prefix-length* | **scope** { *scope-id* | **admin-local** | **global** | **organization-local** | **site-local** } }

undo ipv6 multicast boundary { *ipv6-group-address prefix-length* | **all** | **scope** { *scope-id* | **admin-local** | **global** | **organization-local** | **site-local** } }

Default

An interface is not an IPv6 multicast forwarding boundary.

Views

Interface view

Predefined user roles

network-admin

Parameters

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

prefix-length: Specifies the address prefix length in the range of 8 to 128.

all: Specifies all IPv6 multicast boundaries configured on the interface.

scope-id: Specifies the ID of an admin-scoped zone, in the range of 3 to 15, which is identified by the scope field in the IPv6 multicast group address.

admin-local: Specifies the scoped zone as admin-local, which has a scope ID of 4.

global: Specifies the scoped zone as global, which has a scope ID of 14.

organization-local: Specifies the scoped zone as organization-local, which has a scope ID of 8.

site-local: Specifies the scoped zone as site-local, which has a scope ID of 5.

Usage guidelines

A multicast forwarding boundary sets the boundary condition for the IPv6 multicast groups in the specified address range. If the destination address of an IPv6 multicast packet matches the set boundary condition, the packet is not forwarded.

An interface can act as a forwarding boundary for multiple IPv6 multicast groups in different address ranges. You can implement this by using this command on the interface for each multicast address range. These multicast groups must be in the same scope. The latest configuration of a scope overwrites the previous one.

You do not need to enable IPv6 multicast routing before you execute this command.

Assume that Set A and Set B are both IPv6 multicast forwarding boundary sets with different address ranges, and that B is a subset of A. A takes effect on the interface no matter whether A is configured earlier or later than B.

Examples

Configure VLAN-interface 100 as the forwarding boundary of IPv6 multicast groups in the range of FF03::/16.

```
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 multicast boundary ff03:: 16
```

Configure VLAN-interface 100 as the forwarding boundary of IPv6 multicast groups in the admin-local scope.

```
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 multicast boundary scope 4
```

Related commands

display ipv6 multicast boundary

ipv6 multicast forwarding supervlan community

Use **ipv6 multicast forwarding supervlan community** to enable IPv6 multicast forwarding between sub-VLANs that are associated with a super VLAN.

Use **undo ipv6 multicast forwarding supervlan community** to disable IPv6 multicast forwarding between sub-VLANs that are associated with a super VLAN.

Syntax

ipv6 multicast forwarding supervlan community

undo ipv6 multicast forwarding supervlan community

Default

IPv6 multicast forwarding between sub-VLANs that are associated with a super VLAN is disabled.

Views

VLAN interface view

Predefined user roles

network-admin

Usage guidelines

For this command to take effect, you must clear all IPv6 multicast forwarding entries with the super VLAN interface as the incoming interface after executing this command. To clear IPv6 multicast forwarding entries, use the **reset ipv6 multicast forwarding-table** command.

Examples

Enable IPv6 multicast forwarding between sub-VLANs that are associated with the super VLAN 2.

```
<Sysname> system-view
[Sysname] interface vlan-interface 2
[Sysname-Vlan-interface2] ipv6 multicast forwarding supervlan community
```

Related commands

reset ipv6 multicast forwarding-table

ipv6 multicast routing

Use **ipv6 multicast routing** to enable IPv6 multicast routing and enter IPv6 MRIB view.

Use **undo ipv6 multicast routing** to disable IPv6 multicast routing.

Syntax

ipv6 multicast routing

undo ipv6 multicast routing

Default

IPv6 multicast routing is disabled.

Views

System view

Predefined user roles

network-admin

Usage guidelines

Other Layer 3 IPv6 multicast commands take effect only when IPv6 multicast routing is enabled.

The device does not forward any IPv6 multicast packets before IPv6 multicast routing is enabled.

Examples

\# Enable IPv6 multicast routing, and enter IPv6 MRIB view.

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6]
```

ipv6 multicast rpf-fail-pkt bridging

Use **ipv6 multicast rpf-fail-pkt bridging** to enable the device to multicast the IPv6 multicast data packets that fail the RPF check in a VLAN.

Use **ipv6 multicast rpf-fail-pkt bridging** to restore the default.

Syntax

ipv6 multicast rpf-fail-pkt bridging

undo ipv6 multicast rpf-fail-pkt bridging

Default

The IPv6 multicast data packets that fail the RPF check are not multicast in a VLAN.

Views

VLAN interface view

Predefined user roles

network-admin

Usage guidelines

You do not need to enable IPv6 multicast routing before you execute this command.

Before you execute this command, complete the following tasks:

- Enable the device to flood IPv6 multicast packets that fail the RPF check in all VLANs.

- Enable MLD snooping for the current VLAN.
- Configure a Layer 3 IPv6 multicast routing protocol (such as MLD or IPv6 PIM) on the VLAN interface.

For this command to take effect, you must clear dynamic MLD snooping forwarding entries in the VLAN after executing this command. To clear dynamic MLD snooping forwarding entries, use the **reset mld-snooping group** command.

Examples

\# Enable the device to multicast the IPv6 multicast data packets that fail the RPF check in VLAN 2.

```
<Sysname> system-view
[Sysname] interface vlan-interface 2
[Sysname-Vlan-interface2] ipv6 multicast rpf-fail-pkt bridging
```

Related commands

ipv6 multicast rpf-fail-pkt flooding

reset mld-snooping group

ipv6 multicast rpf-fail-pkt flooding

Use **ipv6 multicast rpf-fail-pkt flooding** to enable the device to flood IPv6 multicast data packets that fail the RPF check in all VLANs.

Use **ipv6 multicast rpf-fail-pkt flooding** to restore the default.

Syntax

ipv6 multicast rpf-fail-pkt flooding

undo ipv6 multicast rpf-fail-pkt flooding

Default

The IPv6 multicast data packets that fail the RPF check are not flooded in a VLAN.

Views

System view

Predefined user roles

network-admin

Usage guidelines

You do not need to enable IPv6 multicast routing before you execute this command.

For this command to take effect, you must clear all IPv6 multicast forwarding entries after executing this command. To clear IPv6 multicast forwarding entries, use the **reset ipv6 multicast forwarding-table** command.

Examples

\# Enable the device to flood IPv6 multicast data packets that fail the RPF check.

```
<Sysname> system-view
[Sysname] ipv6 multicast rpf-fail-pkt flooding
```

Related commands

reset ipv6 multicast forwarding-table

ipv6 multicast rpf-fail-pkt trap-to-cpu

Use **ipv6 multicast rpf-fail-pkt trap-to-cpu** to enable the device to deliver IPv6 multicast data packets that fail the RPF check to the CPU.

Use **undo ipv6 multicast rpf-fail-pkt trap-to-cpu** to restore the default.

Syntax

ipv6 multicast rpf-fail-pkt trap-to-cpu

undo ipv6 multicast rpf-fail-pkt trap-to-cpu

Default

The IPv6 multicast data packets that fail the RPF check are not delivered to the CPU.

Views

System view

Predefined user roles

network-admin

Usage guidelines

You do not need to enable IPv6 multicast routing before you execute this command.

For this command to take effect, you must clear all IPv6 multicast forwarding entries after executing this command. To clear IPv6 multicast forwarding entries, use the **reset ipv6 multicast forwarding-table** command.

Examples

Enable the device to deliver IPv6 multicast data packets that fail the RPF check to the CPU.

```
<Sysname> system-view
[Sysname] ipv6 multicast rpf-fail-pkt trap-to-cpu
```

Related commands

reset ipv6 multicast forwarding-table

load-splitting (IPv6 MRIB view)

Use **load-splitting** to enable IPv6 multicast load splitting.

Use **undo load-splitting** to restore the default.

Syntax

load-splitting { **source** | **source-group** }

undo load-splitting

Default

IPv6 multicast load splitting is disabled.

Views

IPv6 MRIB view

Predefined user roles

network-admin

Parameters

source: Enables IPv6 multicast load splitting based on IPv6 multicast source.

source-group: Enables IPv6 multicast load splitting based on IPv6 multicast source and group.

Examples

\# Enable IPv6 multicast load splitting based on IPv6 multicast source.

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] load-splitting source
```

longest-match (IPv6 MRIB view)

Use **longest-match** to specify the longest prefix match principle for RPF route selection.

Use **undo longest-match** to restore the default.

Syntax

longest-match

undo longest-match

Default

Route preference is used for RPF route selection. The route with the highest route preference is used as the RPF route.

Views

IPv6 MRIB view

Predefined user roles

network-admin

Usage guidelines

This command enables the device to use the matching route with the longest prefix as the RPF route.

Examples

\# Specify the longest prefix match principle for RPF route selection.

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] longest-match
```

mtrace v2 ipv6

Use **mtrace v2 ipv6** to trace an IPv6 multicast path through mtrace2.

Syntax

mtrace v2 ipv6 { *source-address* │ *group-address* } * [**destination** *address* │ **port** *number* │ **wait-time** *time* │ **max-hop** *count*] * [**verbose**]

Views

Any view

Predefined user roles

network-admin

Parameters

source-address: Specifies an IPv6 multicast source by its IPv6 address.

group-address: Specifies an IPv6 multicast group by its IPv6 address. The value range for this argument is FFxy::/16 (excluding FFx1::/16 and FFx2::/16), where "x" and "y" represent any hexadecimal numbers from 0 to F.

destination *address*: Specifies the destination address of IPv6 mtrace. The default destination address is FF02::2.

port *number*: Specifies a UDP port number for IPv6 mtrace, in the range of 1024 to 49151. The default value is 10240.

wait-time *time*: Specifies the length of time that the client waits for a Reply message. The value range for the *time* argument is 1 to 65535 seconds and the default value is 10 seconds. If the client does not receive a Reply message within the waiting time, the client initiates a hop-by-hop IPv6 mtrace.

max-hop *count*: Specifies the maximum number of the hops to be traced. The value range for the *count* argument is 1 to 255 and the default value is 255. If the maximum number of hops is reached on a device, the device directly sends a Reply message to the client and the mtrace is terminated.

verbose: Displays detailed information about IPv6 mtrace. If you do not specify this keyword, the command displays brief information about IPv6 mtrace.

Usage guidelines

To perform a non-group-specific mtrace, specify an IPv6 multicast source and a destination. The mtrace starts from the destination and ends at the device directly connected to the source.

To perform a non-source-specific mtrace, specify an IPv6 multicast group and a destination. The mtrace starts from the destination and ends at the RP associated with the group.

To perform a source-and-group-specific mtrace, specify both an IPv6 multicast source and an IPv6 multicast group. If you also specify a destination, the mtrace starts from the destination and ends at the device directly connected to the source. If you do not specify a destination, the mtrace starts from the upstream device of the client and ends at the device directly connected to the source.

An IPv6 mtrace process stops if the maximum number of the hops to be traced is reached.

If the client does not receive a Reply message within the waiting time, the client initiates a hop-by-hop mtrace to determine which device on the path encountered an error. It sends a Query message with the **hops** field set to 1 and waits for a Reply message. If the client receives a Reply message within the waiting time, it sends a Query message with the **hops** field value increased by 1 and waits for a Reply message. This process continues until the client does not receive a Reply message within the waiting time any more.

Examples

Use mtrace2 to trace the path along which IPv6 multicast data of group FF1E::1 travels from source 10::7 to destination 50::5 and display brief mtrace information.

```
<Sysname> mtrace v2 ipv6 10::7 ff1e::1 destination 50::5
 Mtrace from 10::7 to 50::5 via group ff1e::1, 255 hops at most, press
CTRL_C to break.
 Querying full reverse path...

 Hop  Local address                        Protocol      Time      Fwd code
   0  50::1                                PIM-SM(OSPF)  50 s      NO_ERROR
  -1  40::1                                PIM-SM(OSPF)  40 s      NO_ERROR
  -2  30::1                                PIM-SM(OSPF)  60 s      NO_ERROR
  -3  20::1                                PIM-SM(OSPF)  55 s      NO_ERROR
  -4  10::1                                PIM-SM(OSPF)  30 s      NO_ERROR
```

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Table 8 Command output

Field	Description
Hop	Number of the hop. **0** represents the last hop, **-1** represents the hop before the last hop, and so on.
Local address	IPv6 address of this hop on the traced path.
Protocol	Multicast routing protocol used between this device and the previous-hop device: • PIM-SM. • PIM-DM. Unicast routing protocol used between this device and the previous-hop device: • **LOCAL**—Direct route. • **STATIC ROUTE**—Static route. • **RIP**. • **ISIS**. • **OSPF**. • **BGP**.
Time	Length of time used to transmit an mtrace message between this device and the previous-hop device, in seconds.
Fwd code	Forwarding code or error code: • **NO_ERROR**—No error. • **WRONG_IF**—The interface on which the mtrace message arrives is not in the outgoing interface list of the multicast data. • **PRUNE_SENT**—This device has sent a prune message to the upstream device. • **PRUNE_RCVD**—This device has received a prune message from the downstream device. • **SCOPED**—A multicast border is configured on the incoming interface or outgoing interface of the multicast data. • **NO_ROUTE**—This device does not have any route for the source or the RP. • **WRONG_LAST_HOP**—This device is not the expected last-hop device. • **REACHED_RP**—This device is the RP for the (*, G) multicast data. • **RPF_IF**—The mtrace message arrived on the RPF interface for the multicast data. • **NO_MULTICAST**—The mtrace message arrived on an interface that is not enabled with IP multicast. • **NO_SPACE**—No space is available for inserting a response data block in the packet.

Use mtrace2 to trace the path along which IPv6 multicast data of group FF1E::1 travels from source 10::7 to destination 50::5 and display detailed mtrace information.

```
<Sysname> mtrace v2 ipv6 10::7 ff1e::1 destination 50::5 verbose
 Mtrace from 10::7 to 50::5 via group ff1e::1, 255 hops at most, use query
ID 12345, client port 50001, press CTRL_C to break.
 Querying full reverse path...

    0: Incoming interface ID: 1501
       Outgoing interface ID: 1502
       Local address: 50::1
       Remote address: FE80::A27B:99FF:FECB:207
```

```
     Input multicast packets: 111
     Output multicast packets: 111
     Forwarded packets for the (S, G) pair: 22
     Multicast protocol in use: PIM-SM
     Unicast protocol in use: OSPF
     Forwarding code: NO_ERROR
     Time used (s): 50

 -1: Incoming interface ID: 1601
     Outgoing interface ID: 1602
     Local address: 40::1
     Remote address: FE80::A27B:99FF:FECB:206
     Input multicast packets: 111
     Output multicast packets: 111
     Forwarded packets for the (S, G) pair: 22
     Multicast protocol in use: PIM-SM
     Unicast protocol in use: OSPF
     Forwarding code: NO_ERROR
     Time used (s): 50
```

Table 9 Command output

Field	Description
n	Number of the hop. **0** represents the last hop, **-1** represents the hop before the last hop, and so on.
Incoming interface ID	Index of the incoming interface of the IPv6 multicast data.
Outgoing interface ID	Index of the outgoing interface of the IPv6 multicast data.
Local address	IPv6 address of this hop on the traced path.
Remote address	IPv6 address of the upstream device.
Input multicast packets	Statistics of packets received on the incoming interface of the IPv6 multicast data.
Output multicast packets	Statistics of packets forwarded through the outgoing interface of the IPv6 multicast data.
Forwarded packets for the (S, G) pair	Statistics of forwarded (S, G) packets.
Multicast protocol in use	Multicast routing protocol running on the incoming interface of the multicast data.
Unicast protocol in use	Unicast routing protocol running on the incoming interface of the multicast data.
Forwarding code	Forwarding code or error code: • **NO_ERROR**—No error. • **WRONG_IF**—The interface on which the mtrace message arrives is not in the outgoing interface list of the multicast data. • **PRUNE_SENT**—This device has sent a prune message to the upstream device. • **PRUNE_RCVD**—This device has received a prune message from the downstream device. • **SCOPED**—A multicast border is configured on the

Field	Description
	incoming interface or outgoing interface of the multicast data. • **NO_ROUTE**—This device does not have any route for the source or the RP. • **WRONG_LAST_HOP**—This device is not the expected last-hop device. • **REACHED_RP**—This device is the RP for the (*, G) multicast data. • **RPF_IF**—The mtrace message arrived on the RPF interface for the multicast data. • **NO_MULTICAST**—The mtrace message arrived on an interface that is not enabled with IP multicast. • **NO_SPACE**—No space is available for inserting a response data block in the packet.
Time used (s)	Length of time for transmitting the mtrace message from the previous-hop device to this device.

Related commands

    `ipv6 mtrace-service port`

reset ipv6 multicast fast-forwarding cache

Use **`reset ipv6 multicast fast-forwarding cache`** to clear IPv6 multicast fast forwarding entries.

Syntax

`reset ipv6 multicast fast-forwarding cache` { { *`ipv6-source-address`* | *`ipv6-group-address`* } * | **`all`** } [**`slot`** *`slot-number`*]

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Parameters

`ipv6-source-address`: Specifies an IPv6 multicast source address.

`ipv6-group-address`: Specifies an IPv6 multicast group address. The value range for this argument is FFxy::/16 (excluding FFx1::/16 and FFx2::/16), where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

`slot` *`slot-number`*: Specifies an IRF member device by its member ID. If you do not specify a member device, this command clears IPv6 multicast fast forwarding entries for the master device.

`all`: Specifies all IPv6 multicast fast forwarding entries.

Examples

Clear all IPv6 multicast fast forwarding entries.

```
<Sysname> reset ipv6 multicast fast-forwarding cache all
```

Clear the IPv6 multicast fast forwarding entry for IPv6 multicast source and group (FE1F:20::2, FF0E::1).

```
<Sysname> reset ipv6 multicast fast-forwarding cache fe1f:20::2 ff0e::1
```

Related commands

display ipv6 multicast fast-forwarding cache

reset ipv6 multicast forwarding event

Use **reset ipv6 multicast forwarding event** to clear statistics for IPv6 multicast forwarding events.

Syntax

reset ipv6 multicast forwarding event

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Examples

Clear statistics for the IPv6 multicast forwarding events.

<Sysname> reset ipv6 multicast forwarding event

Related commands

display ipv6 multicast forwarding event

reset ipv6 multicast forwarding-table

Use **reset ipv6 multicast forwarding-table** to clear IPv6 multicast forwarding entries.

Syntax

reset ipv6 multicast forwarding-table { { *ipv6-source-address* [*prefix-length*] | *ipv6-group-address* [*prefix-length*] | **incoming-interface** { *interface-type interface-number* } } * | **all** }

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Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

prefix-length: Specifies the address prefix length. The default value is 128. For an IPv6 multicast group address, the value range for this argument is 8 to 128. For an IPv6 multicast source address, the value range for this argument is 0 to 128.

incoming-interface: Specifies the IPv6 multicast forwarding entries that contain the specified incoming interface.

interface-type interface-number: Specifies an interface by its type and number.

all: Specifies all IPv6 multicast forwarding entries.

Usage guidelines

When you clear an IPv6 multicast forwarding entry, the associated IPv6 multicast routing entry is also cleared.

Examples

Clear IPv6 multicast forwarding entries for IPv6 multicast group FF0E::1.

```
<Sysname> reset ipv6 multicast forwarding-table ff0e::1
```

Related commands

display ipv6 multicast forwarding-table

reset ipv6 multicast routing-table

Use **reset ipv6 multicast routing-table** to clear IPv6 multicast routing entries.

Syntax

reset ipv6 multicast routing-table { { *ipv6-source-address* [*prefix-length*] | *ipv6-group-address* [*prefix-length*] | **incoming-interface** *interface-type interface-number* } * | **all** }

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Parameters

ipv6-source-address: Specifies an IPv6 multicast source address.

ipv6-group-address: Specifies an IPv6 multicast group address in the range of FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F.

prefix-length: Specifies an address prefix length. The default is 128. For an IPv6 multicast group address, the value range for this argument is 8 to 128. For an IPv6 multicast source address, the value range for this argument is 0 to 128.

incoming-interface: Specifies the IPv6 multicast routing entries that contain the specified incoming interface.

interface-type interface-number: Specifies an interface by its type and number.

all: Specifies all IPv6 multicast routing entries.

Usage guidelines

When you clear an IPv6 multicast routing entry, the associated IPv6 multicast forwarding entry is also cleared.

Examples

Clear IPv6 multicast routing entries for IPv6 multicast group FF03::101.

```
<Sysname> reset ipv6 multicast routing-table ff03::101
```

Related commands

display ipv6 multicast routing-table