

IPv6 IPM Router Commands

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ipv6 multicast hop-threshold

To configure the Hop Limit threshold of packets being forwarded out an interface, use the **ipv6 multicast hop-threshold** command in Interface Configuration mode. To return to the default Hop Limit threshold, use the **no** form of this command.

Syntax

ipv6 multicast hop-threshold *hop-value*

no ipv6 multicast hop-threshold

Parameters

- *hop-value*—Hop Limit value. It can be a value from 0 to 256.

Default Configuration

The default Hop Limit value is 0.

Command Mode

Interface Configuration mode

User Guidelines

Multicast packets with a hop value less than the threshold will not be forwarded on the interface.

The default value of 0 means all Multicast packets are forwarded on the interface.

A value of 256 means that no Multicast packets are forwarded on the interface.

You should configure the hop threshold only on border routers. Conversely, routers on which you configure a hop threshold value automatically become border routers.

Example

The following example sets the Hop Limit threshold on a border router to 200:

```
switchxxxxxx(config)# interface vlan 100
switchxxxxxx(config-if)# ipv6 multicast hop-threshold 200
switchxxxxxx(config-if)# exit
```

ipv6 multicast-routing

To enable IPv6 Multicast routing on all IPv6-enabled interfaces of the router and to enable Multicast forwarding, use the **ipv6 multicast-routing** command in global configuration mode. To stop Multicast routing and forwarding, use the **no** form of this command.

Syntax

ipv6 multicast-routing mld-proxy

no ipv6 multicast-routing

Parameters

- **mld-proxy**—Enable Multicast routing using MLD Proxy.

Default Configuration

Multicast routing is not enabled.

Command Mode

Global Configuration mode

User Guidelines

Use the **ipv6 multicast-routing** command with parameter to specify the needed IPv6 Multicast Routing Protocol.

To forward IPv6 Multicast packets on an interface, IPv6 Multicast forwarding must be enabled globally and an IPMv6 Routing protocol must be enabled on the interface.

Example

The following example enables IPv6 Multicast routing using MLD Proxy:

```
switchxxxxxx(config)# ipv6 multicast-routing mld-proxy
```

show ipv6 mroute

To display the contents of the Multicast routing (mroute) table, use the **show ipv6 mroute** command in user EXEC or privileged EXEC mode.

Syntax

show ipv6 mroute [*group-address* [*source-address*]] [**summary**]

Parameters

- ***group-address***—Destination Multicast IPv6 address.
- ***source-address***—Source IPv6 address.
- **summary**—Filters the output to display a one-line, abbreviated summary of each entry in the mroute table.

Command Mode

User EXEC mode

Privileged EXEC mode

User Guidelines

Use the **show ip mroute** command to display information about Mroute entries in the mroute table. The switch populates the Multicast routing table by creating (S, G) entries from (*, G) entries. The asterisk (*) refers to all source addresses, the "S" refers to a single source address, and the "G" is the destination Multicast group address. In creating (S, G) entries, the switch uses the best path to that destination group found in the Unicast routing table (that is, through Reverse Path Forwarding [RPF]).

Examples

Description of Significant fields in the examples below

Timers:Uptime/Expires—"Uptime" indicates per interface how long (in hours, minutes, and seconds) the entry has been in the IPv6 Multicast routing table. "Expires" indicates per interface how long (in hours, minutes, and seconds) until the entry will be removed from the IPv6 Multicast routing table.

(*, FF07::1) and (FF07::1/128, FF07::1)—Entry in the IPv6 Multicast routing table. The entry consists of the IP address of the source router followed by the IP address of the Multicast group. An asterisk (*) in place of the source router indicates all sources.

Entries in the first format are referred to as (*, G) or "star comma G" entries. Entries in the second format are referred to as (S, G) or "S comma G" entries. (*, G) entries are used to build (S, G) entries.

Incoming interface: —Expected interface for a Multicast packet from the source. If the packet is not received on this interface, it is discarded.

Outgoing Interface List (OIF):—Interfaces through which packets will be forwarded.

Example 1. The following is sample output from the **show ipv6 mroute** command with the summary keyword:

```
switchxxxxxx# show ip mroute summary
Timers: Uptime/Expires
IPv6 Multicast Routing Table
(2001:0DB8:999::99, FF07::5), 00:04:55/00:02:36, OIF count:1
(2001:0DB8:999::99, FF07::1), 00:02:46/00:00:12, OIF count:1
```

Example 2. The following is sample output from the **show ipv6 mroute** command:

```
switchxxxxxx# show ip mroute
Timers: Uptime/Expires
IPv6 Multicast Routing Table
(*, FF07::1), 00:04:45/00:02:47, RP 2001:0DB8:6::6
  Incoming interface: vlan5
  Outgoing interface list:
    vlan40, 00:04:45/00:02:47
(2001:0DB8:999::99, FF07::1), 00:02:06/00:01:23
  Incoming interface: vlan5
  Outgoing interface list:
    vlan40, 00:02:06/00:03:27
```

show ipv6 multicast

To display general information about IPv6 Multicast configuration, use the **show ipv6 multicast** command in user EXEC or privileged EXEC mode.

Syntax

show ipv6 multicast [**interface** [*interface-id*]]

Parameters

- **interface**—Displays IPv6 Multicast-related information about interfaces configured for IPv6 Multicast.
- ***interface-id***—Interface identifier for which to display IPv6 Multicast information.

Command Mode

User EXEC mode

Privileged EXEC mode

User Guidelines

Use the **show ipv6 multicas**t command without the **interface** keyword to display general information about the state of IPv6 Multicast on the router.

Use the **show ipv6 multicast** command with the **interface** keyword to display the IPv6 Multicast information about the specified interface.

Example 1. The following is sample output from the **show ipv6 multicast** command without the **interface** keyword when no IPv6 Multicast Routing protocol is enabled:

```
switchxxxxxx# show ipv6 multicast
IPv6 Unicast Forwarding: enabled
IPv6 Multicast Protocol: No
```

Example 2. The following is sample output from the **show ipv6 multicast** command without the **interface** keyword when MLD Proxy is enabled:

```
switchxxxxxx# show ipv6 multicast
IPv6 Unicast Forwarding: enabled
IPv6 Multicast Protocol: MLD Proxy
```

Example 3. The following is sample output from the **show ipv6 multicast** command about the given interface. MLD Proxy is enabled on the interface and the interface is an MLD Proxy Upstream interface:

```
switchxxxxxx# show ipv6 multicast interface vlan 200
IPv6 Unicast Forwarding: enabled
IPv6 Multicast Protocol: MLD Proxy
vlan 200
 IPv6 Status: enabled
 hop-threshold: 0
 MLD Protocol: MLDv2
 MLD Proxy: Upstream
```

Example 4. The following is sample output from the **show ipv6 multicast** command about the given interface. MLD Proxy is enabled on the interface and the interface is an MLD Proxy Downlink interface:

```
switchxxxxxx# show ipv6 multicast interface vlan 100
IPv6 Unicast Forwarding: enabled
IPv6 Multicast Protocol: PIM
vlan 200
 IPv6 Status: enabled
 hop-threshold: 0
 MLD Protocol: MLDv2
 MLD Proxy: DownStream (Upstream: vlan 200)
```

Example 5. The following is sample output from the **show ipv6 multicast** command about the given interface. MLD Proxy is disabled on the interface:

```
switchxxxxxx# show ipv6 multicast interface vlan 100
IPv6 Unicast Forwarding: enabled
IPv6 Multicast Protocol: MLD Proxy
vlan 200
 IPv6 Status: enabled
 hop-threshold: 100
 MLD Protocol: MLDv2
 MLD Proxy: disabled
```