IPv6 Multicast: Routable Address Hello Option

The routable address hello option adds a PIM hello message option that includes all the addresses on the interface on which the PIM hello message is advertised.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About the Routable Address Hello Option

When an IPv6 interior gateway protocol is used to build the unicast routing table, the procedure to detect the upstream device address assumes the address of a PIM neighbor is always same as the address of the next-hop device, as long as they refer to the same device. However, it may not be the case when a device has multiple addresses on a link.

Two typical situations can lead to this situation for IPv6. The first situation can occur when the unicast routing table is not built by an IPv6 interior gateway protocol such as multicast BGP. The second situation occurs when the address of an RP shares a subnet prefix with downstream devices (note that the RP address has to be domain-wide and therefore cannot be a link-local address).

The routable address hello option allows the PIM protocol to avoid such situations by adding a PIM hello message option that includes all the addresses on the interface on which the PIM hello message is advertised. When a PIM device finds an upstream device for some address, the result of RPF calculation is compared with the addresses in this option, in addition to the PIM neighbor's address itself. Because this option includes all the possible addresses of a PIM device on that link, it always includes the RPF calculation result if it refers to the PIM device supporting this option.

Because of size restrictions on PIM messages and the requirement that a routable address hello option fits within a single PIM hello message, a limit of 16 addresses can be configured on the interface.

How to Configure IPv6 Multicast: Routable Address Hello Option

Configuring the Routable Address Hello Option

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **ipv6 pim hello-interval** *seconds*

DETAILED STEPS

Step 1   **enable**

     Example:

```
Device> enable
```

     Enables privileged EXEC mode.

       • Enter your password if prompted.

Step 2   **configure terminal**

     Example:

```
Device# configure terminal
```

     Enters global configuration mode.

Step 3   **interface** *type number*

     Example:

```
Device(config)# interface FastEthernet 1/0
```

     Specifies an interface type and number, and places the device in interface configuration mode.

Step 4   **ipv6 pim hello-interval** *seconds*

Example:

```
Device(config-if)# ipv6 pim hello-interval 45
```
Configures the frequency of PIM hello messages on an interface.

Configuration Example for the Routable Address Hello Option

The following example shows output from the **show ipv6 pim neighbor** command using the **detail** keyword to identify the additional addresses of the neighbors learned through the routable address hello option:

```
Device# show ipv6 pim neighbor detail

Neighbor Address(es)      Interface     Uptime     Expires DR pri Bidir

FE80::A8BB:CCFF:FE00:401   Ethernet0/0   01:34:16   00:01:16 1      B
60::1:1:3

FE80::A8BB:CCFF:FE00:501   Ethernet0/0   01:34:15   00:01:18 1      B
60::1:1:4
```

Additional References

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	*IPv6 Configuration Guide*
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IP multicast commands	Cisco IOS IP Multicast Command Reference
IPv6 commands	Cisco IOS IPv6 Command Reference
Cisco IOS IPv6 features	Cisco IOS IPv6 Feature Mapping

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	*IPv6 RFCs*

MIBs

MIB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for IPv6 Multicast: Routable Address Hello Option

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for IPv6 Multicast: Routable Address Hello Option

Feature Name	Releases	Feature Information
IPv6 Multicast: Routable Address Hello Option	12.0(26)S 12.3(4)T 12.2(25)S 12.2(25)SG 12.2(33)SRA 12.2(33)SXH 12.4 12.4(2)T Cisco IOS XE Release 2.4 15.0(1)S	The routable address hello option adds a PIM hello message option that includes all the addresses on the interface on which the PIM hello message is advertised. The following commands were introduced or modified: **ipv6 pim hello-interval**, **show ipv6 pim neighbor**.