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IPv6 PIM commands

The term "interface" in this chapter refers to VLAN interfaces.

bidir-pim enable (IPv6 PIM view)

Use **bidir-pim enable** to enable IPv6 BIDIR-PIM.

Use **undo bidir-pim enable** to disable IPv6 BIDIR-PIM.

Syntax

bidir-pim enable

undo bidir-pim enable

Default

IPv6 BIDIR-PIM is disabled.

Views

IPv6 PIM view

Predefined user roles

network-admin

Usage guidelines

This command takes effect only when IPv6 multicast routing is enabled.

Examples

```
# Enable IPv6 multicast routing on the public network, and enable IPv6 BIDIR-PIM.
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] quit
[Sysname] ipv6 pim
[Sysname-pim6] bidir-pim enable
```

Related commands

ipv6 multicast routing

bidir-rp-limit (IPv6 PIM view)

Use **bidir-rp-limit** to configure the maximum number of RPs in BIDIR-PIM.

Use **undo bidir-rp-limit** to restore the default.

Syntax

bidir-rp-limit *limit*

undo bidir-rp-limit

Default

The default setting is 4.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

limit: Specifies the maximum number of RPs in IPv6 BIDIR-PIM, in the range of 1 to 4.

Usage guidelines

In an IPv6 BIDIR-PIM domain, one DF election per RP is implemented on all IPv6 PIM-enabled interfaces. To avoid unnecessary DF elections, H3C recommends not configuring multiple RPs for BIDIR-PIM.

This configuration sets a limit on the number of IPv6 BIDIR-PIM RPs. If the number of RPs exceeds the limit, excess RPs do not take effect and can be used only for DF election rather than IPv6 multicast data forwarding.

Examples

```
# Set the maximum number of IPv6 BIDIR RPs to 3 on the public network.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] bidir-rp-limit 3
```

bsm-fragment enable (IPv6 PIM view)

Use **bsm-fragment enable** to enable bootstrap message (BSM) semantic fragmentation.

Use **undo bsm-fragment enable** to disable BSM semantic fragmentation.

Syntax

bsm-fragment enable

undo bsm-fragment enable

Default

BSM semantic fragmentation is enabled.

Views

IPv6 PIM view

Predefined user roles

network-admin

Usage guidelines

Disable BSM semantic fragmentation if the IPv6 PIM-SM domain contains a device that does not support this feature.

Examples

```
# Disable BSM semantic fragmentation on the public network.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] undo bsm-fragment enable
```

bsr-policy (IPv6 PIM view)

Use **bsr-policy** to configure a BSR policy to define the legal bootstrap router (BSR) address range.

Use **undo bsr-policy** to remove the configuration.

Syntax

bsr-policy *acl6-number*

undo bsr-policy

Default

BSR policies are not configured, and bootstrap messages from any IPv6 multicast sources are regarded as valid.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

acl6-number. Specifies an IPv6 basic ACL by its number in the range of 2000 to 2999.

Usage guidelines

You can use this command to guard against BSR spoofing.

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies a BSR address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

Examples

On the public network, configure a BSR policy so that only the devices on the subnet of 2001::2/64 can act as the BSR.

```
<Sysname> system-view
[Sysname] acl ipv6 number 2000
[Sysname-acl6-basic-2000] rule permit source 2001::2 64
[Sysname-acl6-basic-2000] quit
[Sysname] ipv6 pim
[Sysname-pim6] bsr-policy 2000
```

Related commands

c-bsr (IPv6 PIM view)

c-bsr (IPv6 PIM view)

Use **c-bsr** to configure a candidate-BSR (C-BSR).

Use **undo c-bsr** to remove a C-BSR.

Syntax

c-bsr *ipv6-address* [**scope** *scope-id*] [**hash-length** *hash-length* | **priority** *priority*] *

undo c-bsr *ipv6-address* [**scope** *scope-id*]

Default

No C-BSR is configured.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

ipv6-address: Specifies the IPv6 address of a C-BSR.

scope *scope-id*: Specifies the ID of an IPv6 admin-scoped zone, in the range of 3 to 15. If you do not specify an admin-scoped zone, this command designates the C-BSR to the global-scoped zone.

hash-length *hash-length*: Specifies a hash mask length in the range of 0 to 128. The default setting is 126.

priority *priority*: Specifies a C-BSR priority in the range of 0 to 255. The default setting is 64. A larger value represents a higher priority.

Usage guidelines

The IPv6 address of a C-BSR must be the IPv6 address of a local IPv6 PIM enabled interface on the C-BSR. Otherwise, the configuration does not take effect.

If you execute this command for a zone multiple times, the most recent configuration takes effect.

You can configure the same C-BSR for different zones.

Examples

On the public network, configure the interface with IPv6 address 1101::1 as a C-BSR for the global-scoped zone.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] c-bsr 1101::1
```

c-rp (IPv6 PIM view)

Use **c-rp** to configure a candidate-RP (C-RP).

Use **undo c-rp** to remove the configuration of a C-RP.

Syntax

c-rp *ipv6-address* [**advertisement-interval** *adv-interval* | { **group-policy** *acl6-number* | **scope** *scope-id* } | **holdtime** *hold-time* | **priority** *priority*] * [**bidir**]

undo c-rp *ipv6-address*

Default

No C-RPs are configured.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

ipv6-address: Specifies the IPv6 address of a C-RP.

advertisement-interval *adv-interval*: Specifies an interval between two C-RP-Adv messages, in the range of 1 to 65535 seconds. The default value is 60 seconds.

group-policy *acl6-number*: Specifies an IPv6 basic ACL number in the range of 2000 to 2999. The C-RP is designated only to IPv6 multicast groups that the ACL permits. The C-RP is designated to all IPv6 multicast groups FF00::/8 when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not have valid rules.

scope *scope-id*: Specifies the ID of an IPv6 admin-scoped zone, in the range of 3 to 15.

holdtime *hold-time*: Specifies a C-RP lifetime in the range of 1 to 65535 seconds. The default value is 150 seconds.

priority *priority*: Specifies a C-RP priority in the range of 0 to 255. The default setting is 192. A larger value represents a lower priority.

bidir: Specifies BIDIR-PIM. If you do not specify this keyword, the C-RP provides services for IPv6 PIM-SM.

Usage guidelines

The IPv6 address of a C-RP must be the IPv6 address of a local IPv6 PIM enabled interface on the C-RP. Otherwise, the configuration does not take effect.

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies an IPv6 multicast group range.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

To use a C-RP for multiple IPv6 multicast group ranges, create multiple rules that specify different IPv6 multicast group ranges in the ACL.

If you execute this command using the same IPv6 address of a C-RP multiple times, the most recent configuration takes effect.

Examples

On the public network, configure the interface with IPv6 address 2001::1 as a C-RP for IPv6 multicast group range FF0E:0:1391::/96, and set its priority to 10.

```
<Sysname> system-view
[Sysname] acl ipv6 number 2000
[Sysname-acl6-basic-2000] rule permit source ff0e:0:1391:: 96
[Sysname-acl6-basic-2000] quit
[Sysname] ipv6 pim
[Sysname-pim6] c-rp 2001::1 group-policy 2000 priority 10
```

crp-policy (IPv6 PIM view)

Use **crp-policy** to configure a C-RP policy to define the legal C-RP address range and the IPv6 multicast group range to which the C-RP is designated.

Use **undo crp-policy** to remove the configuration.

Syntax

crp-policy *acl6-number*

undo crp-policy

Default

C-RP policies are not configured, and all received C-RP messages are regarded as legal.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

acl6-number: Specifies an IPv6 advanced ACL number in the range of 3000 to 3999.

Usage guidelines

You can configure this command to guard against C-RP spoofing.

When you configure a rule in the IPv6 ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies an RP address.
- The **destination** *dest-address dest-prefix* option specifies an IPv6 multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

When the device compares the advertisement message against the destination field in the ACL, it uses only the prefix of the IPv6 multicast group range in the advertisement message. For example, the IPv6 multicast group range specified in a C-RP advertisement message is FF0E:0:1::/96. If the prefix FF0E:0:1:: is in the IPv6 multicast group range specified in the destination field of the ACL, the advertisement message passes the filtering. Otherwise, the advertisement message is discarded.

Examples

On the public network, configure a C-RP policy so that only devices in the address range of 2001::2/64 can be C-RPs for the IPv6 multicast group range FF03::101/64.

```
<Sysname> system-view
[Sysname] acl ipv6 number 3000
[Sysname-acl6-adv-3000] rule permit ipv6 source 2001::2 64 destination ff03::101 64
[Sysname-acl6-adv-3000] quit
[Sysname] ipv6 pim
[Sysname-pim6] crp-policy 3000
```

Related commands

c-rp (IPv6 PIM view)

display ipv6 pim bsr-info

Use **display ipv6 pim bsr-info** to display BSR information in the IPv6 PIM-SM domain.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] bsr-info
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays BSR information on the public network.

Examples

Display BSR information in the IPv6 PIM-SM domain on the public network.

```
<Sysname> display ipv6 pim bsr-info
```

```
Scope: non-scoped
```

```
State: Accept Preferred
```

```
Bootstrap timer: 00:01:44
```

```
Elected BSR address: 12:12::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

```
Uptime: 00:21:56
```

```
Scope: 5
```

```
State: Accept Any
```

```
Scope-zone expiry timer: 00:21:12
```

```
Scope: 6
```

```
State: Elected
```

```
Bootstrap timer: 00:00:26
```

```
Elected BSR address: 17:11::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

```
Uptime: 02:53:37
```

```
Candidate BSR address: 17:11::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

```
Scope: 7
```

```
State: Candidate
```

```
Bootstrap timer: 00:01:56
```

```
Elected BSR address: 61:37::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

```
Uptime: 02:53:32
```

```
Candidate BSR address: 17:12::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

```
Scope: 8
```

```
State: Pending
```

```
Bootstrap timer: 00:00:07
```

```
Candidate BSR address: 17:13::1
```

```
Priority: 64
```

```
Hash mask length: 126
```

Table 1 Command output

Field	Description
Scope-zone expiry timer	Scoped zone aging timer.

Field	Description
Elected BSR address	Address of the elected BSR.
Candidate BSR address	Address of the C-BSR.
Priority	BSR priority.
Uptime	Length of time the BSR has been up.

display ipv6 pim claimed-route

Use **display ipv6 pim claimed-route** to display information about all routes that IPv6 PIM uses.

Syntax

display ipv6 pim [**vpn-instance** *vpn-instance-name*] **claimed-route** [*ipv6-source-address*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays information about all routes that IPv6 PIM uses on the public network.

ipv6-source-address: Specifies an IPv6 multicast source by its IPv6 address. If you do not specify an IPv6 multicast source, this command displays information about all routes that IPv6 PIM uses.

Examples

Display information about all routes that IPv6 PIM uses on the public network.

```
<Sysname> display ipv6 pim claimed-route
RPF-route selecting rule: longest-match

Route/mask: 7:11::/64 (unicast (direct))
  RPF interface: Vlan-interface2, RPF neighbor: 8::2
  Total number of (S,G) or (*,G) dependent on this route entry: 4
  (7:11::10, ff1e::1)
  (7:11::10, ff1e::2)
  (7:11::10, ff1e::3)
  (*, ff1e::4)

Route/mask: 7:12::/64 (unicast)
  RPF interface: Vlan-interface2, RPF neighbor: 8::3,
  Total number of (S,G) or (*,G) dependent on this route entry: 2
  (7:12::10, ff1e::1)
  (7:12::10, ff1e::2)
```

Table 2 Command output

Field	Description
Route/mask	Route entry. Route types in parentheses include:

Field	Description
	<ul style="list-style-type: none"> igp—IGP unicast route. egp—EGP unicast route. unicast (direct)—Directly connected unicast route. unicast—Other unicast route, such as static unicast route.
RPF interface	Name of the RPF interface.
RPF neighbor	IPv6 address of the RPF neighbor.
Total number of (S,G) or (*,G) dependent on this route entry	Total number (S, G) or (*, G) entries dependent on the RPF route and their details.

display ipv6 pim c-rp

Use **display ipv6 pim c-rp** to display C-RP information in the IPv6 PIM-SM domain.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] c-rp [ local ]
```

Views

Any view

Predefined user roles

network-admin
network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays information about learned C-RPs on the public network.

local: Specifies local C-RPs. If you do not specify this keyword, the command displays information about all C-RPs.

Usage guidelines

You can display information about learned C-RPs only on the BSR. On other devices, you can display information about the locally configured C-RPs.

Examples

Display information about learned C-RPs on the public network.

```
<Sysname> display ipv6 pim c-rp
Scope: non-scoped
  Group/MaskLen: FF00::/8 [B]
    C-RP address          Priority  HoldTime  Uptime    Expires
    8:12::2 (local)      192     150      00:27:48  00:01:43
  Group/MaskLen: FF23::/92 Expires: 00:02:07
```

Display information about the locally configured C-RPs.

```
<Sysname> display ipv6 pim c-rp local
Candidate RP: 8:12::2(Loop1)
  Priority: 192
  HoldTime: 150
  Advertisement interval: 60
```

Next advertisement scheduled at: 00:00:46

Table 3 Command output

Field	Description
Group/MaskLen	IPv6 multicast group to which the C-RP is designated.
[B]	The C-RP provides services for IPv6 BIDIR-PIM. If this field is not displayed, the C-RP provides services for IPv6 PIM-SM.
C-RP address	IPv6 address of the C-RP. If the C-RP resides on the device where this command is executed, this field displays (local) after the address.
HoldTime	C-RP lifetime.
Uptime	Length of time the C-RP has been up: <ul style="list-style-type: none">• w—Weeks.• d—Days.• h—Hours.
Expires	Remaining lifetime for the C-RP and IPv6 multicast group.
Candidate RP	IPv6 address of the locally configured C-RP.
Advertisement interval	Interval between two advertisement messages sent by the locally configured C-RP.
Next advertisement scheduled at	Remaining time for the locally configured C-RP to send the next advertisement message.

display ipv6 pim df-info

Use **display ipv6 pim df-info** to display the DF information of IPv6 BIDIR-PIM.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] df-info [ ipv6-rp-address ]
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays the DF information of IPv6 BIDIR-PIM on the public network.

ipv6-rp-address: Specifies an RP of IPv6 BIDIR-PIM by its IPv6 address.

Examples

Display the DF information of IPv6 BIDIR-PIM on the public network.

```
<Sysname> display ipv6 pim df-info
```

```
RP address: 1:1::1
```

Interface	State	DF-Pref	DF-Metric	DF-Uptime	DF-Address
Vlan1	Lose	0	0	00:20:13	FE80:7:11::1
Vlan2	Win	10	1	00:20:12	FE80:10:1::2 (local)

Table 4 Command output

Field	Description
State	DF election state: <ul style="list-style-type: none"> • Win—The interface wins the DF election. • Lose—The interface loses the DF election. • Offer—The interface is in the initial state of the DF election. • Backoff—The interface is acting as the DF, but there are more appropriate devices running for the DF. This field displays a hyphen if the interface does not participate in the DF election.
DF-Pref	Advertised route preference for DF election.
DF-Metric	Advertised route metric for DF election.
DF-Uptime	Length of time the DF has been up.
DF-Address	IP address of DF. If the DF resides on the device where this command is executed, this field displays (local) after the address.

display ipv6 pim interface

Use **display ipv6 pim interface** to display IPv6 PIM information on an interface.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] interface [ interface-type interface-number ]
[ verbose ]
```

Views

Any view

Predefined user roles

network-admin
network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays IPv6 PIM information on an interface on the public network.

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

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

Examples

Display IPv6 PIM brief information on all interfaces on the public network.

```
<Sysname> display ipv6 pim interface
Interface          NbrCnt  HelloInt  DR-Pri    DR-Address
Vlan1              1       30       1         FE80::200:5EFF:FE04:8700
```

Table 5 Command output

Field	Description
Interface	Name of the interface.
NbrCnt	Number of IPv6 PIM neighbors.
HelloInt	Interval for sending hello messages.
DR-Pri	DR priority.
DR-Address	IPv6 address (link-local address) of the DR.

Display detailed IPv6 PIM information on VLAN-interface 1 on the public network.

```
<Sysname> display ipv6 pim interface vlan-interface 1 verbose
Interface: Vlan-interface 1, FE80::200:5EFF:FE04:8700
  PIM version: 2
  PIM mode: Sparse
  PIM DR: FE80::200:AFF:FE01:101
  PIM DR Priority (configured): 1
  PIM neighbor count: 1
  PIM hello interval: 30 s
  PIM LAN delay (negotiated): 500 ms
  PIM LAN delay (configured): 500 ms
  PIM override interval (negotiated): 2500 ms
  PIM override interval (configured): 2500 ms
  PIM neighbor tracking (negotiated): disabled
  PIM neighbor tracking (configured): disabled
  PIM generation ID: 0xF5712241
  PIM require generation ID: disabled
  PIM hello hold interval: 105 s
  PIM assert hold interval: 180 s
  PIM triggered hello delay: 5 s
  PIM J/P interval: 60 s
  PIM J/P hold interval: 210 s
  PIM BSR domain border: disabled
  PIM BFD: disabled
  PIM passive: disabled
  Number of routers on network not using DR priority: 0
  Number of routers on network not using LAN delay: 0
  Number of routers on network not using neighbor tracking: 2
```

Table 6 Command output

Field	Description
Interface	Interface name and IPv6 address (link-local address).
PIM mode	IPv6 PIM mode: dense or sparse.
PIM DR	IPv6 address (link-local address) of the DR.
PIM DR Priority (configured)	Configured DR priority.
PIM neighbor count	Total number of IPv6 PIM neighbors.

Field	Description
PIM hello interval	Interval between two hello messages.
PIM LAN delay (negotiated)	Negotiated IPv6 message propagation delay.
PIM LAN delay (configured)	Configured IPv6 message propagation delay.
PIM override interval (negotiated)	Negotiated interval for overriding prune messages.
PIM override interval (configured)	Configured interval for overriding prune messages.
PIM neighbor tracking (negotiated)	Negotiated neighbor tracking status: enabled or disabled.
PIM neighbor tracking (configured)	Configured neighbor tracking status: enabled or disabled.
PIM require generation ID	Whether the feature of dropping hello messages without Generation_ID is enabled.
PIM hello hold interval	IPv6 PIM neighbor lifetime.
PIM assert hold interval	Assert holdtime timer.
PIM triggered hello delay	Maximum delay for sending hello messages.
PIM J/P interval	Interval between two join/prune messages.
PIM J/P hold interval	Joined/pruned state holdtime timer.
PIM BSR domain border	Whether an IPv6 PIM domain border is configured.
PIM BFD	Whether IPv6 PIM is enabled to work with BFD.
PIM passive	Whether IPv6 PIM passive mode is enabled.
Number of routers on network not using DR priority	Number of routers that do not use the DR priority field on the subnet where the interface resides.
Number of routers on network not using LAN delay	Number of routers that do not use the LAN delay field on the subnet where the interface resides.
Number of routers on network not using neighbor tracking	Number of routers that are not enabled with neighbor tracking on the subnet where the interface resides.

display ipv6 pim neighbor

Use **display ipv6 pim neighbor** to display IPv6 PIM neighbor information.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] neighbor [ipv6-neighbor-address | interface interface-type interface-number | verbose ] *
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays IPv6 PIM neighbor information on the public network.

ipv6-neighbor-address: Specifies an IPv6 PIM neighbor by its IPv6 address. If you do not specify an IPv6 PIM neighbor, this command displays information about all IPv6 PIM neighbors.

interface *interface-type interface-number*: Specifies an interface by its type and number. If you do not specify an interface, this command displays information about IPv6 PIM neighbors on all interfaces.

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

Examples

Display brief information about all IPv6 PIM neighbors on the public network.

```
<Sysname> display ipv6 pim neighbor
Total Number of Neighbors = 2

Neighbor          Interface          Uptime    Expires    DR-Priority Mode
FE80::A01:101:1  Vlan1              02:50:49 00:01:31  1           B
FE80::A01:102:1  Vlan2              02:49:39 00:01:42  1           
```

Display detailed information about the IPv6 PIM neighbor with IPv6 address 11.110.0.20 on the public network.

```
<Sysname> display ipv6 pim neighbor fe80::a01:101:1 verbose
Neighbor: FE80::A01:101:1
  Interface: Vlan-interface3
  Uptime: 00:00:10
  Expiry time: 00:00:30
  DR Priority: 1
  Generation ID: 0x2ACEFE15
  Holdtime: 105 s
  LAN delay: 500 ms
  Override interval: 2500 ms
  State refresh interval: 60 s
  Neighbor tracking: Disabled
  Bidirectional PIM: Enabled
  Secondary address(es):
  1::1
```

Table 7 Command output

Field	Description
Neighbor	Primary IPv6 address (link-local address) of the IPv6 PIM neighbor.
Interface	Interface that connects to the IPv6 PIM neighbor.
Uptime	Length of time the IPv6 PIM neighbor has been up.
Expires/Expiry time	Remaining lifetime for the IPv6 PIM neighbor. If the IPv6 PIM neighbor is always up and reachable, this field displays never .
DR-Priority/DR Priority	Priority of the IPv6 PIM neighbor.
Mode	IPv6 PIM mode. If the IPv6 PIM mode is BIDIR-PIM, this field displays B . If an IPv6 PIM mode other than IPv6 BIDIR-PIM is used, this field is blank.
Generation ID	Generation ID of the IPv6 PIM neighbor. (A random value represents a status change of the IPv6 PIM neighbor.)
Holdtime	Lifetime of the IPv6 PIM neighbor. If the IPv6 PIM neighbor is always up

Field	Description
	and reachable, this field displays forever .
LAN delay	IPv6 PIM message propagation delay.
Override interval	Interval for overriding prune messages.
State refresh interval	Interval for refreshing state. This field is displayed only when the IPv6 PIM neighbor is operating in IPv6 PIM-DM mode and the state refresh feature is enabled.
Neighbor tracking	Neighbor tracking status: enabled or disabled.
Bidirectional PIM	Whether IPv6 BIDIR-PIM is enabled.
Secondary address(es)	Secondary IPv6 address (non-link-local address) of the IPv6 PIM neighbor.

display ipv6 pim routing-table

Use **display ipv6 pim routing-table** to display IPv6 PIM routing entries.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] routing-table [ ipv6-group-address [ prefix-length ] | ipv6-source-address [ prefix-length ] | flags flag-value | fsm | incoming-interface interface-type interface-number | mode mode-type | outgoing-interface { exclude | include | match } interface-type interface-number ] *
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays IPv6 PIM routing entries on the public network.

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

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

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

flags *flag-value*: Specifies a flag. If you do not specify a flag, this command displays IPv6 PIM routing entries that contain all flags.

The following lists the values for the *flag-value* argument and their meanings:

- **act**: Specifies IPv6 PIM routing entries that have been used for routing data.
- **del**: Specifies IPv6 PIM routing entries to be deleted.
- **exprune**: Specifies IPv6 PIM routing entries that contain outgoing interfaces pruned by other IPv6 multicast routing protocols.

- **ext**: Specifies IPv6 PIM routing entries that contain outgoing interfaces provided by other multicast routing protocols.
- **loc**: Specifies IPv6 PIM routing entries on the devices that reside on the same subnet as the IPv6 multicast source.
- **niif**: Specifies IPv6 PIM routing entries that contain unknown incoming interfaces.
- **nonbr**: Specifies IPv6 PIM routing entries with IPv6 PIM neighbor lookup failure.
- **rpt**: Specifies IPv6 PIM routing entries on the RPT branches where (S, G) prunes have been sent to the RP.
- **spt**: Specifies IPv6 PIM routing entries on the SPT.
- **swt**: Specifies IPv6 PIM routing entries in the process of RPT-to-SPT switchover.
- **wc**: Specifies IPv6 PIM routing entries with wildcards.

fsm: Displays detailed information about the finite state machine.

incoming-interface *interface-type interface-number*. Specifies an incoming interface. If you do not specify an incoming interface, this command displays IPv6 PIM routing entries that contain all incoming interfaces.

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

mode *mode-type*: Specifies an IPv6 PIM mode. If you do not specify an IPv6 PIM mode, this command displays IPv6 PIM routing entries in all modes. The available IPv6 PIM modes include:

- **bidir**: Specifies IPv6 BIDIR-PIM.
- **dm**: Specifies IPv6 PIM-DM.
- **sm**: Specifies IPv6 PIM-SM.
- **ssm**: Specifies IPv6 PIM-SSM.

outgoing-interface { **exclude** | **include** | **match** } *interface-type interface-number*. Specifies an outgoing interface. If you do not specify an outgoing interface, this command displays IPv6 PIM routing entries that contain all outgoing interfaces. Whether the specified outgoing interface is contained in the IPv6 PIM routing table depends on the following conditions:

- If you specify an excluded interface, this command displays IPv6 PIM routing entries that do not contain the specified outgoing interface.
- If you specify an included interface, this command displays IPv6 PIM routing entries that contain the specified outgoing interface.
- If you specify a matching interface, this command displays IPv6 PIM routing entries that contain only the specified outgoing interface.

Examples

Display IPv6 PIM routing entries on the public network.

```
<Sysname> display ipv6 pim routing-table
Total 0 (*, G) entry; 1 (S, G) entry
```

```
(2001::2, FFE3::101)
RP: FE80::A01:100:1
Protocol: pim-sm, Flag: SPT LOC ACT
UpTime: 02:54:43
Upstream interface: Vlan-interface1
  Upstream neighbor: NULL
  RPF prime neighbor: NULL
Downstream interface(s) information:
Total number of downstreams: 1
  1: Vlan-interface2
```

Protocol: pim-sm, UpTime: 02:54:43, Expires: 00:02:47

Display the state machine information of IPv6 PIM routing entries on the public network.

```
<Sysname> display ipv6 pim routing-table fsm
```

Total 0 (*, G) entry; 1 (S, G) entry

Abbreviations for FSM states:

NI - no info, J - joined, NJ - not joined, P - pruned,
NP - not pruned, PP - prune pending, W - winner, L - loser,
F - forwarding, AP - ack pending, DR - designated router,
NDR - non-designated router, RCV - downstream receivers

(2001::2, FFE3::101)

RP: FE80::A01:100:1

Protocol: pim-sm, Flag: SPT LOC ACT

UpTime: 02:54:43

Upstream interface: Vlan-interface1

Upstream neighbor: NULL

RPF prime neighbor: NULL

Join/Prune FSM: [SPT: J] [RPT: NP]

Downstream interface(s) information:

Total number of downstreams: 1

1: Vlan-interface2

Protocol: pim-sm, UpTime: 02:54:43, Expires: 00:02:47

DR state: [DR]

Join/Prune FSM: [NI]

Assert FSM: [NI]

FSM information for non-downstream interfaces: None

Table 8 Command output

Field	Description
Total 0 (*, G) entry; 1 (S, G) entry	Total number of (S, G) entries and (*, G) entries.
(2001::2, FFE3::101)	(S, G) entry.
Protocol	IPv6 PIM mode: IPv6 PIM-SM or IPv6 PIM-DM.
Flag	Flag of the (S, G) entry or (*, G) entry: <ul style="list-style-type: none">• ACT—The entry has been used for routing data.• DEL—The entry will be removed.• EXPRUNE—Some outgoing interfaces are pruned by other IPv6 multicast routing protocols.• EXT—The entry contains outgoing interfaces provided by other multicast routing protocols.• LOC—The entry is on a router directly connected to the same subnet with the IPv6 multicast source.• NIIF—The entry contains unknown incoming interfaces.• NONBR—The entry has an IPv6 PIM neighbor lookup failure.• RPT—The entry is on an RPT branch where (S, G) prunes have been sent to the RP.• SPT—The entry is on the SPT.• SWT—The entry is in the process of RPT-to-SPT switchover.

Field	Description
	<ul style="list-style-type: none"> WC—The entry contains a wildcard.
Uptime	Length of time since the (S, G) entry or (*, G) entry was installed.
Upstream interface	Upstream (incoming) interface of the (S, G) entry or (*, G) entry.
Upstream neighbor	Upstream neighbor of the (S, G) entry or (*, G) entry.
RPF prime neighbor	RPF neighbor of the (S, G) or (*, G) entry: <ul style="list-style-type: none"> For a (*, G) entry, if the RPF neighbor is the RP, the field displays NULL. For an (S, G) entry, if the RPF neighbor is a router that directly connects to the IPv6 multicast source, this field displays NULL.
Downstream interface(s) information	Information about the downstream interfaces: <ul style="list-style-type: none"> Total number of downstream interfaces. Names of the downstream interfaces. Protocol type on the downstream interfaces. Uptime of the downstream interfaces. Expiration time of the downstream interfaces.

display ipv6 pim rp-info

Use **display ipv6 pim rp-info** to display RP information in the IPv6 PIM-SM domain.

Syntax

```
display ipv6 pim [ vpn-instance vpn-instance-name ] rp-info [ ipv6-group-address ]
```

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays RP information on the public network.

ipv6-group-address: Specifies an IPv6 multicast group by its address in the range of FFxy::/16 (excluding FFx0::/16, FFx1::/16, FFx2::/16, and FF0y::), where "x" and "y" represent any hexadecimal numbers from 0 to F. If you do not specify an IPv6 multicast group, this command displays RP information for all IPv6 multicast groups.

Examples

Display information about the RP for IPv6 multicast group FF0E::101 on the public network.

```
<Sysname> display ipv6 pim rp-info ff0e::101
  BSR RP address is: 7:12::1
    Priority: 192
    HoldTime: 180
    Uptime: 03:01:10
    Expires: 00:02:30

  Static RP address is: 7:12::1
```

```

Preferred: No
Configured ACL: 2003

RP mapping for this group is: 7:12::1 (local host)
# Display information about all RPs for all IPv6 multicast groups.
<Sysname> display ipv6 pim rp-info
BSR RP information:
  Scope: non-scoped
  Group/MaskLen: FF00::/8
    RP address          Priority  HoldTime  Uptime    Expires
    8:12::2 (local)    192     180      03:01:36  00:02:29
  Group/MaskLen: FF23::/92 [B]
    RP address          Priority  HoldTime  Uptime    Expires
    7:12::1 (local)    192     180      00:00:39  00:02:57

Static RP information:
  RP address          ACL     Mode     Preferred
  3:3::1              2000   pim-sm   No
  3:3::2              2001   bidir    Yes
  3:3::3              2002   pim-sm   No
  3:3::4              2002   pim-sm   No
  3:3::5              2002   pim-sm   Yes

```

Table 9 Command output

Field	Description
Group/MaskLen	IPv6 multicast group to which the RP is designated.
[B]	The RP provides services for IPv6 multicast groups in the BIDIR-PIM domain. If this field is not displayed, the RP provides services for groups in the IPv6 PIM-SM domain.
RP address	IPv6 address of the RP. If the RP resides on the device where this command is executed, this field displays (local) after the address.
Priority	Priority of the RP.
HoldTime	RP lifetime.
Uptime	Length of time the RP has been up.
Expires	Remaining lifetime for the RP.
Preferred	Whether the static RP is preferred.
Configured ACL/ACL	ACL defining the IPv6 multicast groups to which the static RP is designated.
Mode	RP service mode: IPv6 PIM-SM or IPv6 BIDIR-PIM.
RP mapping for this group	IPv6 address of the RP that provides services for the IPv6 multicast group.

display ipv6 pim statistics

Use **display ipv6 pim statistics** to display statistics for IPv6 PIM packets.

Syntax

display ipv6 pim statistics

Views

Any view

Predefined user roles

network-admin

network-operator

Examples

Display statistics for IPv6 PIM packets.

```
<Sysname> display ipv6 pim statistics
```

```
Received PIM packets: 3295
```

```
Sent PIM packets      : 5975
```

	Valid	Invalid	Succeeded	Failed
Hello	: 3128	0	4333	0
Reg	: 14	0	0	0
Reg-stop	: 0	0	0	0
JP	: 151	0	561	0
BSM	: 0	0	1081	0
Assert	: 0	0	0	0
Graft	: 0	0	0	0
Graft-ACK	: 0	0	0	0
C-RP	: 0	0	0	0
SRM	: 0	0	0	0
DF	: 0	0	0	0

Table 10 Command output

Field	Description
Received PIM packets	Total number of received IPv6 PIM packets.
Sent PIM packets	Total number of sent IPv6 PIM packets.
Valid	Number of received valid IPv6 PIM packets.
Invalid	Number of received invalid IPv6 PIM packets.
Succeeded	Number of valid IPv6 PIM packets that were sent successfully.
Failed	Number of valid IPv6 PIM packets that failed to be sent.
Hello	Hello message statistics.
Reg	Register message statistics.
Reg-stop	Register-stop message statistics.
JP	Join/prune message statistics.
BSM	Bootstrap message statistics.
Assert	Assert message statistics.
Graft	Graft message statistics.
Graft-ACK	Graft-ACK message statistics.
C-RP	C-RP message statistics.
SRM	State refresh message statistics.

Field	Description
DF	Designated forwarder message statistics

hello-option dr-priority (IPv6 PIM view)

Use **hello-option dr-priority** to set the global DR priority.

Use **undo hello-option dr-priority** to restore the default.

Syntax

hello-option dr-priority *priority*

undo hello-option dr-priority

Default

The global DR priority is 1.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

priority: Specifies a DR priority in the range of 0 to 4294967295. A larger value represents a higher priority.

Usage guidelines

You can set the DR priority globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the global DR priority to 3 on the public network.
```

```
<Sysname> system-view
```

```
[Sysname] ipv6 pim
```

```
[Sysname-pim6] hello-option dr-priority 3
```

Related commands

ipv6 pim hello-option dr-priority

hello-option holdtime (IPv6 PIM view)

Use **hello-option holdtime** to set the global IPv6 PIM neighbor lifetime.

Use **undo hello-option holdtime** to restore the default.

Syntax

hello-option holdtime *time*

undo hello-option holdtime

Default

The global IPv6 PIM neighbor lifetime is 105 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

time: Specifies an IPv6 PIM neighbor lifetime in the range of 1 to 65535 seconds. If you set the value to 65535 seconds, the IPv6 PIM neighbors are always reachable.

Usage guidelines

You can set the IPv6 PIM neighbor lifetime globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the global IPv6 PIM neighbor lifetime to 120 seconds on the public network.
```

```
<Sysname> system-view  
[Sysname] ipv6 pim  
[Sysname-pim6] hello-option holdtime 120
```

Related commands

ipv6 pim hello-option holdtime

hello-option lan-delay (IPv6 PIM view)

Use **hello-option lan-delay** to set the global IPv6 PIM message propagation delay on a shared-media LAN.

Use **undo hello-option lan-delay** to restore the default.

Syntax

hello-option lan-delay *delay*

undo hello-option lan-delay

Default

The global IPv6 PIM message propagation delay on a shared-media LAN is 500 milliseconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

delay: Specifies an IPv6 PIM message propagation delay on a shared-media LAN in the range of 1 to 32767 milliseconds.

Usage guidelines

You can set the IPv6 PIM message propagation delay globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the global IPv6 PIM message propagation delay on a shared-media LAN to 200 milliseconds on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] hello-option lan-delay 200
```

Related commands

- **hello-option override-interval** (IPv6 PIM view)
- **ipv6 pim hello-option lan-delay**
- **ipv6 pim hello-option override-interval**

hello-option neighbor-tracking (IPv6 PIM view)

Use **hello-option neighbor-tracking** to enable neighbor tracking globally and disable join message suppression.

Use **undo hello-option neighbor-tracking** to restore the default.

Syntax

hello-option neighbor-tracking

undo hello-option neighbor-tracking

Default

Neighbor tracking is disabled, and join message suppression is enabled.

Views

IPv6 PIM view

Predefined user roles

network-admin

Usage guidelines

You can enable neighbor tracking globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Enable neighbor tracking globally on the public network.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] hello-option neighbor-tracking
```

Related commands

ipv6 pim hello-option neighbor-tracking

hello-option override-interval (IPv6 PIM view)

Use **hello-option override-interval** to set the global override interval.

Use **undo hello-option override-interval** to restore the default.

Syntax

hello-option override-interval *interval*

undo hello-option override-interval

Default

The global override interval is 2500 milliseconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

interval: Specifies an override interval in the range of 1 to 65535 milliseconds.

Usage guidelines

You can set the override interval globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the global override interval to 2000 milliseconds on the public network.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] hello-option override-interval 2000
```

Related commands

- **hello-option lan-delay** (IPv6 PIM view)
- **ipv6 pim hello-option lan-delay**
- **ipv6 pim hello-option override-interval**

holdtime join-prune (IPv6 PIM view)

Use **holdtime join-prune** to set the global joined/pruned state holdtime timer.

Use **undo holdtime join-prune** to restore the default.

Syntax

```
holdtime join-prune time
undo holdtime join-prune
```

Default

The global joined/pruned state holdtime timer is 210 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

time: Specifies a joined/pruned state holdtime timer in the range of 1 to 65535 seconds.

Usage guidelines

You can set the joined/pruned state holdtime globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

To prevent the upstream neighbors from aging out, you must configure the join/prune interval to be less than the joined/pruned state holdtime timer.

Examples

```
# Set the global joined/pruned state holdtime timer to 280 seconds on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] holdtime join-prune 280
```

Related commands

- **ipv6 pim holdtime join-prune**
- **timer join-prune** (IPv6 PIM view)

ipv6 pim

Use **ipv6 pim** to enter IPv6 PIM view.

Use **undo ipv6 pim** to remove all configurations in IPv6 PIM view.

Syntax

```
ipv6 pim [ vpn-instance vpn-instance-name ]
undo ipv6 pim [ vpn-instance vpn-instance-name ]
```

Views

System view

Predefined user roles

network-admin

Parameters

vpn-instance *vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, you enter public network IPv6 PIM view.

Examples

```
# Enable IPv6 multicast routing on the public network and enter public network IPv6 PIM view.
```

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] quit
[Sysname] ipv6 pim
[Sysname-pim6]
```

```
# Enable IPv6 multicast routing in VPN instance mvpn and enter IPv6 PIM view of VPN instance mvpn.
```

```
<Sysname> system-view
[Sysname] ipv6 multicast routing vpn-instance mvpn
[Sysname-mrib6-mvpn] quit
[Sysname] ipv6 pim vpn-instance mvpn
[Sysname-pim6-mvpn]
```

ipv6 pim bfd enable

Use **ipv6 pim bfd enable** to enable BFD for IPv6 PIM.

Use **undo ipv6 pim bfd enable** to disable BFD for IPv6 PIM.

Syntax

```
ipv6 pim bfd enable
undo ipv6 pim bfd enable
```

Default

BFD is disabled for IPv6 PIM.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

This command takes effect only when IPv6 PIM-DM or IPv6 PIM-SM is enabled on the interface.

Examples

```
# On the public network, enable IPv6 multicast routing, enable IPv6 PIM-DM on interface
VLAN-interface 100, and enable BFD for IPv6 PIM on the interface.
```

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] quit
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim dm
[Sysname-Vlan-interface100] ipv6 pim bfd enable
```

Related commands

- **ipv6 pim dm**
- **ipv6 pim sm**

ipv6 pim bsr-boundary

Use **ipv6 pim bsr-boundary** to configure an IPv6 PIM domain border (a bootstrap message boundary).

Use **ipv6 pim bsr-boundary** to remove the configured IPv6 PIM-SM domain border.

Syntax

```
ipv6 pim bsr-boundary
undo ipv6 pim bsr-boundary
```

Default

No IPv6 PIM-SM domain border is configured.

Views

Interface view

Predefined user roles

network-admin

Examples

```
# Configure VLAN-interface 100 as an IPv6 PIM-SM domain border.
```

```
<Sysname> system-view
[Sysname] interface vlan-interface 100
```

```
[Sysname-Vlan-interface100] ipv6 pim bsr-boundary
```

Related commands

- **c-bsr** (IPv6 PIM view)
- **ipv6 multicast boundary**

ipv6 pim dm

Use **ipv6 pim dm** to enable IPv6 PIM-DM.

Use **undo ipv6 pim dm** to disable IPv6 PIM-DM.

Syntax

```
ipv6 pim dm
```

```
undo ipv6 pim dm
```

Default

IPv6 PIM-DM is disabled.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

This command takes effect only when IPv6 multicast routing is enabled on the public network or for the VPN instance to which the interface belongs.

Examples

```
# Enable IPv6 multicast routing, and enable IPv6 PIM-DM on VLAN-interface 100 on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib6] quit
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim dm
```

Related commands

```
ipv6 multicast routing
```

ipv6 pim hello-option dr-priority

Use **ipv6 pim hello-option dr-priority** to set the DR priority on an interface.

Use **undo ipv6 pim hello-option dr-priority** to restore the default.

Syntax

```
ipv6 pim hello-option dr-priority priority
```

```
undo ipv6 pim hello-option dr-priority
```

Default

The DR priority on an interface is 1.

Views

Interface view

Predefined user roles

network-admin

Parameters

priority: Specifies a DR priority in the range of 0 to 4294967295. A larger value represents a higher priority.

Usage guidelines

You can set the DR priority for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the DR priority to 3 on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim hello-option dr-priority 3
```

Related commands

hello-option dr-priority (IPv6 PIM view)

ipv6 pim hello-option holdtime

Use **ipv6 pim hello-option holdtime** to set the IPv6 PIM neighbor lifetime on an interface.

Use **undo ipv6 pim hello-option holdtime** to restore the default.

Syntax

```
ipv6 pim hello-option holdtime time
undo ipv6 pim hello-option holdtime
```

Default

The IPv6 PIM neighbor lifetime is 105 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

time: Specifies an IPv6 PIM neighbor lifetime in the range of 1 to 65535 seconds. If you set the value to 65535 seconds, the IPv6 PIM neighbor is always reachable.

Usage guidelines

You can set the IPv6 PIM neighbor lifetime for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the IPv6 PIM neighbor lifetime to 120 seconds on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
```

```
[Sysname-Vlan-interface100] ipv6 pim hello-option holdtime 120
```

Related commands

hello-option holdtime (IPv6 PIM view)

ipv6 pim hello-option lan-delay

Use **ipv6 pim hello-option lan-delay** to set the IPv6 PIM message propagation delay on a shared-media LAN for an interface.

Use **undo ipv6 pim hello-option lan-delay** to restore the default.

Syntax

ipv6 pim hello-option lan-delay *delay*

undo ipv6 pim hello-option lan-delay

Default

The IPv6 PIM message propagation delay on a shared-media LAN is 500 milliseconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

delay: Specifies an IPv6 PIM message propagation delay on a shared-media LAN in the range of 1 to 32767 milliseconds.

Usage guidelines

You can set the IPv6 PIM message propagation delay for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the IPv6 PIM message propagation delay on a shared-media LAN to 200 milliseconds on VLAN-interface 100.
```

```
<Sysname> system-view
```

```
[Sysname] interface vlan-interface 100
```

```
[Sysname-Vlan-interface100] ipv6 pim hello-option lan-delay 200
```

Related commands

- **hello-option lan-delay** (IPv6 PIM view)
- **hello-option override-interval** (IPv6 PIM view)
- **ipv6 pim hello-option override-interval**

ipv6 pim hello-option neighbor-tracking

Use **ipv6 pim hello-option neighbor-tracking** to enable neighbor tracking and disable join message suppression on an interface.

Use **ipv6 pim hello-option neighbor-tracking disable** to disable neighbor tracking on an interface when join message suppression is disabled globally.

Use **undo ipv6 pim hello-option neighbor-tracking** to restore neighbor tracking on an interface to be consistent with the global setting.

Syntax

```
ipv6 pim hello-option neighbor-tracking
ipv6 pim hello-option neighbor-tracking disable
undo ipv6 pim hello-option neighbor-tracking
```

Default

Neighbor tracking is disabled, and join message suppression is enabled.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

You can enable neighbor tracking for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

Enable neighbor tracking on VLAN-interface 100.

```
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim hello-option neighbor-tracking
```

On the public network, disable neighbor tracking on VLAN-interface 100 when neighbor tracking is enabled globally.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] hello-option neighbor-tracking
[Sysname-pim6] quit
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim hello-option neighbor-tracking disable
```

Related commands

hello-option neighbor-tracking (IPv6 PIM view)

ipv6 pim hello-option override-interval

Use **ipv6 pim hello-option override-interval** to set the override interval on an interface.

Use **undo ipv6 pim hello-option override-interval** to restore the default.

Syntax

```
ipv6 pim hello-option override-interval interval
undo ipv6 pim hello-option override-interval
```

Default

The override interval is 2500 milliseconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

interval: Specifies an override interval in the range of 1 to 65535 milliseconds.

Usage guidelines

You can set the override interval for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the override interval to 2000 milliseconds on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim hello-option override-interval 2000
```

Related commands

- **hello-option lan-delay** (IPv6 PIM view)
- **hello-option override-interval** (IPv6 PIM view)
- **ipv6 pim hello-option lan-delay**

ipv6 pim holdtime join-prune

Use **ipv6 pim holdtime join-prune** to set the joined/pruned state holdtime timer on an interface.

Use **undo ipv6 pim holdtime join-prune** to restore the default.

Syntax

```
ipv6 pim holdtime join-prune time
undo ipv6 pim holdtime join-prune
```

Default

The joined/pruned state holdtime timer is 210 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

time: Specifies a joined/pruned state holdtime timer in the range of 1 to 65535 seconds.

Usage guidelines

You can set the joined/pruned state holdtime for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

To prevent the upstream neighbors from aging out, you must configure the join/prune interval to be less than the joined/pruned state holdtime timer.

Examples

```
# Set the joined/pruned state holdtime timer to 280 seconds on VLAN-interface 100.
<Sysname> system-view
```

```
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim holdtime join-prune 280
```

Related commands

- **holdtime join-prune** (IPv6 PIM view)
- **ipv6 pim timer join-prune**

ipv6 pim neighbor-policy

Use **ipv6 pim neighbor-policy** to configure an IPv6 PIM hello policy to define the legal source address range for hello messages.

Use **undo ipv6 pim neighbor-policy** to restore the default.

Syntax

```
ipv6 pim neighbor-policy acl6-number
undo ipv6 pim neighbor-policy
```

Default

IPv6 PIM hello policies are not configured, and all the received hello messages are considered legal.

Views

Interface view

Predefined user roles

network-admin

Parameters

acl6-number. Specifies an IPv6 basic ACL number in the range of 2000 to 2999.

Usage guidelines

You can configure this command to guard against hello message spoofing.

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies a source IPv6 address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

Examples

Configure an IPv6 PIM hello policy on VLAN-interface 100, so that only the devices on the subnet of FE80:101::101/64 can become PIM neighbors of this switch.

```
<Sysname> system-view
[Sysname] acl ipv6 number 2000
[Sysname-acl6-basic-2000] rule permit source fe80:101::101 64
[Sysname-acl6-basic-2000] quit
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim neighbor-policy 2000
```

ipv6 pim non-stop-routing

Use **ipv6 pim non-stop-routing** to enable IPv6 PIM NSR.

Use **undo ipv6 pim non-stop-routing** to disable IPv6 PIM NSR.

Syntax

```
ipv6 pim non-stop-routing
undo ipv6 pim non-stop-routing
```

Default

IPv6 PIM NSR is disabled.

Views

System view

Predefined user roles

network-admin

Examples

```
# Enable IPv6 PIM NSR.
<Sysname> system-view
[Sysname] ipv6 pim non-stop-routing
```

ipv6 pim passive

Use **ipv6 pim passive** to enable IPv6 PIM passive mode on an interface.

Use **undo ipv6 pim passive** to restore the default.

Syntax

```
ipv6 pim passive
undo ipv6 pim passive
```

Default

The IPv6 PIM passive mode is disabled for an interface.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

This command takes effect only when IPv6 PIM-DM or IPv6 PIM-SM is enabled on the interface.

Examples

```
# On the public network, enable IPv6 multicast routing. Then, enable IPv6 PIM-DM and IPv6 PIM
passive mode on VLAN-interface 100.
<Sysname> system-view
[Sysname] ipv6 multicast routing
[Sysname-mrib] quit
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim dm
[Sysname-Vlan-interface100] ipv6 pim passive
```

ipv6 pim require-genid

Use **ipv6 pim require-genid** to enable dropping hello messages without the generation ID options.

Use **undo ipv6 pim require-genid** to restore the default.

Syntax

ipv6 pim require-genid
undo ipv6 pim require-genid

Default

Hello messages without the generation ID options are accepted.

Views

Interface view

Predefined user roles

network-admin

Examples

```
# Enable VLAN-interface 100 to drop hello messages without the generation ID options.  
<Sysname> system-view  
[Sysname] interface vlan-interface 100  
[Sysname-Vlan-interface100] ipv6 pim require-genid
```

ipv6 pim sm

Use **ipv6 pim sm** to enable IPv6 PIM-SM.

Use **undo ipv6 pim sm** to disable IPv6 PIM-SM.

Syntax

ipv6 pim sm
undo ipv6 pim sm

Default

IPv6 PIM-SM is disabled.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

This command takes effect only when IPv6 multicast routing is enabled on the public network or for the VPN instance to which the interface belongs.

Examples

```
# On the public network, enable IPv6 multicast routing, and enable IPv6 PIM-SM on VLAN-interface 100.  
<Sysname> system-view  
[Sysname] ipv6 multicast routing  
[Sysname-mrib6] quit  
[Sysname] interface vlan-interface 100  
[Sysname-Vlan-interface100] ipv6 pim sm
```

Related commands

ipv6 multicast routing

ipv6 pim state-refresh-capable

Use **ipv6 pim state-refresh-capable** to enable the state refresh feature on an interface.

Use **undo ipv6 pim state-refresh-capable** to disable the state refresh feature.

Syntax

ipv6 pim state-refresh-capable

undo ipv6 pim state-refresh-capable

Default

The state refresh feature is enabled.

Views

Interface view

Predefined user roles

network-admin

Examples

```
# Disable state refresh on VLAN-interface 100.
```

```
<Sysname> system-view
```

```
[Sysname] interface vlan-interface 100
```

```
[Sysname-Vlan-interface100] undo ipv6 pim state-refresh-capable
```

Related commands

- **state-refresh-hoplimit** (IPv6 PIM view)
- **state-refresh-interval** (IPv6 PIM view)
- **state-refresh-rate-limit** (IPv6 PIM view)

ipv6 pim timer graft-retry

Use **ipv6 pim timer graft-retry** to set a graft retry timer.

Use **undo ipv6 pim timer graft-retry** to restore the default.

Syntax

ipv6 pim timer graft-retry *interval*

undo ipv6 pim timer graft-retry

Default

The graft retry timer is 3 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

interval: Specifies a graft retry timer in the range of 1 to 65535 seconds.

Examples

```
# Set the graft retry timer to 80 seconds on VLAN-interface 100.
```

```
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim timer graft-retry 80
```

ipv6 pim timer hello

Use **ipv6 pim timer hello** to set the hello interval on an interface.

Use **undo ipv6 pim timer hello** to restore the default.

Syntax

```
ipv6 pim timer hello interval
undo ipv6 pim timer hello
```

Default

The hello interval is 30 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

interval: Specifies a hello interval in the range of 0 to 18000 seconds. If you set the value to 0 seconds, the interface does not send hello messages.

Usage guidelines

You can set the hello interval for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the hello interval to 40 seconds on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim timer hello 40
```

Related commands

timer hello (IPv6 PIM view)

ipv6 pim timer join-prune

Use **ipv6 pim timer join-prune** to set the join/prune interval on an interface.

Use **undo ipv6 pim timer join-prune** to restore the default.

Syntax

```
ipv6 pim timer join-prune interval
undo ipv6 pim timer join-prune
```

Default

The join/prune interval is 60 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

interval: Specifies a join/prune interval in the range of 0 to 18000 seconds. If you set the value to 0 seconds, the interface does not send join or prune messages.

Usage guidelines

You can set the join/prune interval for an interface in interface view or globally for all interfaces in IPv6 PIM view. For an interface, the interface-specific configuration takes priority over the global configuration.

The configuration takes effect after the current interval ends.

To prevent the upstream neighbors from aging out, you must configure the interval for sending join/prune messages to be less than the joined/pruned state holdtime timer.

Examples

```
# Set the join/prune interval to 80 seconds on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
[Sysname-Vlan-interface100] ipv6 pim timer join-prune 80
```

Related commands

- **ipv6 pim holdtime join-prune**
- **timer join-prune** (IPv6 PIM view)

ipv6 pim triggered-hello-delay

Use **ipv6 pim triggered-hello-delay** to set the triggered hello delay.

Use **undo ipv6 pim triggered-hello-delay** to restore the default.

Syntax

```
ipv6 pim triggered-hello-delay delay
undo ipv6 pim triggered-hello-delay
```

Default

The triggered hello delay is 5 seconds.

Views

Interface view

Predefined user roles

network-admin

Parameters

delay: Specifies a triggered hello delay in the range of 1 to 60 seconds.

Usage guidelines

The triggered hello delay defines the maximum delay for sending a hello message.

Examples

```
# Set the triggered hello delay to 3 seconds on VLAN-interface 100.
<Sysname> system-view
[Sysname] interface vlan-interface 100
```

```
[Sysname-Vlan-interface100] ipv6 pim triggered-hello-delay 3
```

jp-pkt-size (IPv6 PIM view)

Use **jp-pkt-size** to set the maximum size of each join/prune message.

Use **undo jp-pkt-size** to restore the default.

Syntax

```
jp-pkt-size size
```

```
undo jp-pkt-size
```

Default

The maximum size of a join/prune message is 8100 bytes.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

size: Specifies the maximum size of each join/prune message, in the range of 100 to 64000 bytes.

Examples

```
# Set the maximum size of each join/prune message to 1500 bytes on the public network.
```

```
<Sysname> system-view
```

```
[Sysname] ipv6 pim
```

```
[Sysname-pim6] jp-pkt-size 1500
```

register-policy (IPv6 PIM view)

Use **register-policy** to configure an IPv6 PIM register policy.

Use **undo register-policy** to remove the configured IPv6 PIM register policy.

Syntax

```
register-policy acl6-number
```

```
undo register-policy
```

Default

IPv6 PIM register policies are not configured.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

acl6-number: Specifies an IPv6 advanced ACL number in the range of 3000 to 3999.

Usage guidelines

When you configure a rule in the IPv6 advanced ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.

- The **source** *source-address source-prefix* option specifies an IPv6 multicast source address.
- The **destination** *dest-address dest-prefix* option specifies an IPv6 multicast group range.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

Examples

On the public network, configure an IPv6 PIM register policy to accept the register messages from the sources on the subnet of 3:1::/64 to the groups on the subnet of FF0E:13::/64.

```
<Sysname> system-view
[Sysname] acl ipv6 number 3000
[Sysname-acl6-adv-3000] rule permit ipv6 source 3:1:: 64 destination ff0e:13:: 64
[Sysname-acl6-adv-3000] quit
[Sysname] ipv6 pim
[Sysname-pim6] register-policy 3000
```

register-whole-checksum (IPv6 PIM view)

Use **register-whole-checksum** to configure the switch to calculate the checksum based on an entire register message.

Use **undo register-whole-checksum** to restore the default.

Syntax

```
register-whole-checksum
undo register-whole-checksum
```

Default

The switch calculates the checksum based on the register message header.

Views

IPv6 PIM view

Predefined user roles

network-admin

Examples

On the public network, configure the switch to calculate the checksum based on an entire register message.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] register-whole-checksum
```

source-lifetime (IPv6 PIM view)

Use **source-lifetime** to set the IPv6 multicast source lifetime.

Use **undo source-lifetime** to restore the default.

Syntax

```
source-lifetime time
undo source-lifetime
```

Default

The IPv6 multicast source lifetime is 210 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

time: Specifies an IPv6 multicast source lifetime in the range of 0 to 31536000 seconds. If you set the value to 0 seconds, IPv6 multicast sources are never aged out.

Examples

```
# Set the IPv6 multicast source lifetime to 200 seconds on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] source-lifetime 200
```

source-policy (IPv6 PIM view)

Use **source-policy** to configure an IPv6 multicast source policy.

Use **undo source-policy** to remove the configured IPv6 multicast source policy.

Syntax

```
source-policy acl6-number
```

```
undo source-policy
```

Default

IPv6 multicast source policies are not configured.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

acl6-number: Specifies an IPv6 basic or advanced ACL number in the range of 2000 to 3999.

Usage guidelines

When you configure a rule in the IPv6 ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- In a basic ACL, the **source** *source-address source-prefix* option specifies a source IPv6 address.
- In an advanced ACL, the **source** *source-address source-prefix* option specifies a source IPv6 address. The **destination** *dest-address dest-prefix* option specifies an IPv6 multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

If you execute this command multiple times, the most recent configuration takes effect.

Examples

```
# On the public network, configure an IPv6 multicast source policy to permit IPv6 multicast data from source 3121::1 and deny data from source 3121::2.
```

```
<Sysname> system-view
```

```

[Sysname] acl ipv6 number 2000
[Sysname-acl6-basic-2000] rule permit source 3121::1 128
[Sysname-acl6-basic-2000] rule deny source 3121::2 128
[Sysname-acl6-basic-2000] quit
[Sysname] ipv6 pim
[Sysname-pim6] source-policy 2000
[Sysname-pim6] quit

```

spt-switch-threshold (IPv6 PIM view)

Use **spt-switch-threshold** to configure the switchover to SPT.

Use **undo spt-switch-threshold** to restore the default.

Syntax

```

spt-switch-threshold { immediacy | infinity } [ group-policy acl6-number ]
undo spt-switch-threshold [ immediacy | infinity ] [ group-policy acl6-number ]

```

Default

The switch immediately triggers the switchover to SPT after receiving the first IPv6 multicast packet.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

immediacy: Triggers the switchover to SPT immediately.

infinity: Disables the switchover to SPT.

group-policy *acl6-number*: Specifies an IPv6 basic ACL number in the range of 2000 to 2999. If you specify an ACL, the configuration applies to the IPv6 multicast groups that the ACL permits. The configuration applies to all IPv6 multicast groups when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not have valid rules.

Usage guidelines



CAUTION:

If the device is an RP, disabling the switchover to SPT might cause multicast traffic forwarding failures on the source-side DR. When disabling the switchover to SPT, be sure you fully understand its impact on your network.

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies an IPv6 multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

Examples

```
# Disable the switchover to SPT on receiver-side DR on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] spt-switch-threshold infinity
```

ssm-policy (IPv6 PIM view)

Use **ssm-policy** to configure the IPv6 SSM group range.

Use **undo ssm-policy** to restore the default.

Syntax

```
ssm-policy acl6-number
undo ssm-policy
```

Default

The IPv6 SSM group range is FF3x::/32, where x can be any valid scope.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

acl6-number. Specifies an IPv6 basic ACL number in the range of 2000 to 2999.

Usage guidelines

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies an IPv6 multicast group range.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

You can use this command to define an IPv6 multicast group address range. If a packet to an IPv6 multicast group is permitted by the used ACL, the multicast mode for the packet is IPv6 PIM-SSM. Otherwise, the multicast mode is IPv6 PIM-SM.

Examples

```
# Configure the IPv6 SSM group range to be FF3E:0:8192::/96.
<Sysname> system-view
[Sysname] acl ipv6 number 2000
[Sysname-acl6-basic-2000] rule permit source ff3e:0:8192:: 96
[Sysname-acl6-basic-2000] quit
[Sysname] ipv6 pim
[Sysname-pim6] ssm-policy 2000
```

state-refresh-hoplimit (IPv6 PIM view)

Use **state-refresh-hoplimit** to set the hop limit for state refresh messages.

Use **undo state-refresh-hoplimit** to restore the default.

Syntax

```
state-refresh-hoplimit hoplimit-value
```

undo state-refresh-hoplimit

Default

The hop limit for state refresh messages is 255.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

hoplimit-value: Specifies a hop limit for state refresh messages, in the range of 1 to 255.

Examples

```
# Set the hop limit for state refresh messages to 45 on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] state-refresh-hoplimit 45
```

Related commands

- **ipv6 pim state-refresh-capable**
- **state-refresh-interval** (IPv6 PIM view)
- **state-refresh-rate-limit** (IPv6 PIM view)

state-refresh-interval (IPv6 PIM view)

Use **state-refresh-interval** to set the state refresh interval.

Use **undo state-refresh-interval** to restore the default.

Syntax

```
state-refresh-interval interval
```

```
undo state-refresh-interval
```

Default

The state refresh interval is 60 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

interval: Specifies a state refresh interval in the range of 1 to 255 seconds.

Examples

```
# Set the state refresh interval to 70 seconds on the public network.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] state-refresh-interval 70
```

Related commands

- **ipv6 pim state-refresh-capable**

- **state-refresh-hoplimit** (IPv6 PIM view)
- **state-refresh-rate-limit** (IPv6 PIM view)

state-refresh-rate-limit (IPv6 PIM view)

Use **state-refresh-rate-limit** to set the amount of time that the switch waits before accepting a new state refresh message.

Use **undo state-refresh-rate-limit** to restore the default.

Syntax

```
state-refresh-rate-limit time
undo state-refresh-rate-limit
```

Default

The switch waits 30 seconds before it accepts a new state refresh message.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

time: Specifies an amount of time that the switch waits before accepting a new refresh message, in the range of 1 to 65535 seconds.

Examples

On the public network, set the switch to wait 45 seconds before it accepts a new state refresh message.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] state-refresh-rate-limit 45
```

Related commands

- **ipv6 pim state-refresh-capable**
- **state-refresh-hoplimit** (IPv6 PIM view)
- **state-refresh-interval** (IPv6 PIM view)

static-rp (IPv6 PIM view)

Use **static-rp** to configure a static RP.

Use **undo static-rp** to remove a static RP.

Syntax

```
static-rp ipv6-rp-address [ acl6-number | bidir | preferred ] *
undo static-rp ipv6-rp-address
```

Default

No static RP is configured.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

ipv6-rp-address: Specifies the IPv6 address of the static RP. This address must be a valid IPv6 global unicast address.

acl6-number: Specifies an IPv6 basic ACL number in the range of 2000 to 2999 to filter IPv6 multicast groups. The C-RP is designated only to IPv6 multicast groups that the ACL permits. The static RP is designated to all IPv6 multicast groups when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not contain valid rules.

bidir: Specifies IPv6 BIDIR-PIM to which the static RP is designated. If you do not specify this keyword, the PIM mode is IPv6 PIM-SM.

preferred: Gives priority to the static RP if the static RP and the dynamic RP exist at the same time in the network. The dynamic RP takes effect only if no static RP exists in the network. If you do not specify this keyword, the dynamic RP has priority. The static RP takes effect only if no dynamic RP exists in the network or when the dynamic RP fails.

Usage guidelines

You do not need to enable IPv6 PIM on an interface that acts as a static RP.

When you configure a rule in the IPv6 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-prefix* option specifies an IPv6 multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

When the ACL rules used by a static RP change, new RPs must be elected for all IPv6 multicast groups.

You can configure multiple static RPs by using this command multiple times. However, if you specify the same static RP address or reference the same ACL in this command, the most recent configuration takes effect. If you configure multiple static RPs for the same IPv6 multicast group, the static RP with the highest IPv6 address is used.

Examples

On the public network, configure the interface with IPv6 address 2001::2 as a static RP for IPv6 multicast groups in the range of FF03::101/64, and give priority to this static RP.

```
<Sysname> system-view
[Sysname] acl ipv6 number 2001
[Sysname-acl6-basic-2001] rule permit source ff03::101 64
[Sysname-acl6-basic-2001] quit
[Sysname] ipv6 pim
[Sysname-pim6] static-rp 2001::2 2001 preferred
```

Related commands

display ipv6 pim rp-info

timer hello (IPv6 PIM view)

Use **timer hello** to set the global hello interval.

Use **undo timer hello** to restore the default.

Syntax

```
timer hello interval  
undo timer hello
```

Default

The global hello interval is 30 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

interval: Specifies a hello interval in the range of 0 to 18000 seconds. If you set the value to 0 seconds, the interface does not send hello messages.

Usage guidelines

You can set the hello interval globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

Examples

```
# Set the global hello interval to 40 seconds on the public network.  
<Sysname> system-view  
[Sysname] ipv6 pim  
[Sysname-pim6] timer hello 40
```

Related commands

ipv6 pim timer hello

timer join-prune (IPv6 PIM view)

Use **timer join-prune** to set the global join/prune interval.

Use **undo timer join-prune** to restore the default.

Syntax

```
timer join-prune interval  
undo timer join-prune
```

Default

The global join/prune interval is 60 seconds.

Views

IPv6 PIM view

Predefined user roles

network-admin

Parameters

interval: Specifies a join/prune interval in the range of 0 to 18000 seconds. If you set the value to 0 seconds, the interface does not send join or prune messages.

Usage guidelines

You can set the join/prune interval globally for all interfaces in IPv6 PIM view or for an interface in interface view. For an interface, the interface-specific configuration takes priority over the global configuration.

The configuration takes effect after the current interval ends.

To prevent the upstream neighbors from aging out, you must configure the interval for sending join/prune messages to be less than the joined/pruned state holdtime timer.

Examples

Set the global join/prune interval to 80 seconds on the public network.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] timer join-prune 80
```

Related commands

- **holdtime join-prune** (IPv6 PIM view)
- **ipv6 pim timer join-prune**