

# Contents

IPv6 PIM commands	1
anycast-rp (IPv6 PIM view)	1
bsm-fragment enable (IPv6 PIM view)	1
bsm-reflection enable (IPv6 PIM view)	2
bsr-policy (IPv6 PIM view)	2
bsr-rp-mapping rfc2362 (IPv6 PIM view)	3
c-bsr (IPv6 PIM view)	4
c-rp (IPv6 PIM view)	5
crp-policy (IPv6 PIM view)	6
display ipv6 pim bsr-info	7
display ipv6 pim claimed-route	8
display ipv6 pim c-rp	9
display ipv6 pim interface	11
display ipv6 pim neighbor	13
display ipv6 pim routing-table	14
display ipv6 pim rp-info	18
display ipv6 pim statistics	20
dscp	21
hello-option dr-priority (IPv6 PIM view)	22
hello-option holdtime (IPv6 PIM view)	22
hello-option lan-delay (IPv6 PIM view)	23
hello-option neighbor-tracking (IPv6 PIM view)	24
hello-option override-interval (IPv6 PIM view)	24
holdtime join-prune (IPv6 PIM view)	25
ipv6 pim	26
ipv6 pim bfd enable	26
ipv6 pim bsr-boundary	27
ipv6 pim dm	27
ipv6 pim hello-option dr-priority	28
ipv6 pim hello-option holdtime	29
ipv6 pim hello-option lan-delay	29
ipv6 pim hello-option neighbor-tracking	30
ipv6 pim hello-option override-interval	31
ipv6 pim holdtime join-prune	32
ipv6 pim neighbor-policy	32
ipv6 pim non-stop-routing	33
ipv6 pim passive	34
ipv6 pim require-genid	34
ipv6 pim sm	35
ipv6 pim state-refresh-capable	35
ipv6 pim timer graft-retry	36
ipv6 pim timer hello	36
ipv6 pim timer join-prune	37
ipv6 pim triggered-hello-delay	38
jp-pkt-size (IPv6 PIM view)	38
register-policy (IPv6 PIM view)	39
register-suppression-timeout (IPv6 PIM view)	40
register-whole-checksum (IPv6 PIM view)	40
snmp-agent trap enable pim6	41
source-lifetime (IPv6 PIM view)	42
source-policy (IPv6 PIM view)	42
spt-switch-threshold (IPv6 PIM view)	43
ssm-policy (IPv6 PIM view)	44
state-refresh-hoplimit (IPv6 PIM view)	45
state-refresh-interval (IPv6 PIM view)	45
state-refresh-rate-limit (IPv6 PIM view)	46
static-rp (IPv6 PIM view)	47

timer hello (IPv6 PIM view) ..... 48  
timer join-prune (IPv6 PIM view) ..... 49

# IPv6 PIM commands

## anycast-rp (IPv6 PIM view)

Use **anycast-rp** to add an anycast RP member to an Anycast RP set.

Use **undo anycast-rp** to remove an anycast RP member from an Anycast RP set.

### Syntax

```
anycast-rp ipv6-anycast-rp-address ipv6-member-address
```

```
undo anycast-rp ipv6-anycast-rp-address ipv6-member-address
```

### Default

No Anycast RP sets exist.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*ipv6-anycast-rp-address*: Specifies an Anycast RP address. It must be a legal IPv6 global unicast address.

*ipv6-member-address*: Specifies an Anycast RP member address. It must be a legal IPv6 global unicast address and must be different from the Anycast RP address.

### Usage guidelines

To add multiple RP member addresses to an Anycast RP set, execute this command multiple times with the same Anycast RP address but different RP member addresses.

To configure multiple Anycast RP sets, execute this command multiple times with different Anycast RP addresses.

### Examples

```
# Add Anycast RP members 1:1::1 and 1:2::1 to Anycast RP set 1:1::0.
```

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

```
[Sysname] ipv6 pim
```

```
[Sysname-pim6] anycast-rp 1:1::0 1:1::1
```

```
[Sysname-pim6] anycast-rp 1:1::0 1:2::1
```

### Related commands

```
display ipv6 pim rp-info
```

## 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 BSM semantic fragmentation.

## Examples

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

## bsm-reflection enable (IPv6 PIM view)

Use **bsm-reflection enable** to enable the device to forward BSMs out of their incoming interfaces.

Use **undo bsm-reflection enable** to disable the device from forwarding BSMs out of their incoming interfaces.

## Syntax

```
bsm-reflection enable
undo bsm-reflection enable
```

## Default

The device forwards BSMs out of their incoming interfaces.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Usage guidelines

Disable this feature if all the routers in the IPv6 PIM-SM domain have consistent routing information.

## Examples

```
# Disable the device from forwarding BSMs out of their incoming interfaces.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] undo bsm-reflection enable
```

## bsr-policy (IPv6 PIM view)

Use **bsr-policy** to configure a BSR policy.

Use `undo bsr-policy` to restore the default.

### Syntax

```
bsr-policy ipv6-acl-number  
undo bsr-policy
```

### Default

No BSR policy exists, and all bootstrap messages are regarded as legal.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*ipv6-acl-number*: Specifies an IPv6 basic ACL by its number in the range of 2000 to 2999.

### Usage guidelines

A BSR policy filters bootstrap messages to guard against BSR spoofing.

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

- 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.

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

### Examples

# Configure a BSR policy so that only the devices on subnet 2001::2/64 can act as the BSR.

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

### Related commands

**c-bsr** (IPv6 PIM view)

## bsr-rp-mapping rfc2362 (IPv6 PIM view)

Use **bsr-rp-mapping rfc2362** to configure the device to use the BSR RP hash algorithm described in RFC 2362.

Use **undo bsr-rp-mapping rfc2362** to restore the default.

### Syntax

```
bsr-rp-mapping rfc2362  
undo bsr-rp-mapping rfc2362
```

### Default

The device uses the BSR RP hash algorithm described in RFC 4601.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Usage guidelines

To ensure consistent group-to-RP mappings on all routers in the PIM domain, configure all the routers to use the same BSR RP hash algorithm.

## Examples

```
# Configure the router to use the BSR RP hash algorithm described in RFC 2362.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] bsr-rp-mapping rfc2362
```

## c-bsr (IPv6 PIM view)

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

Use **undo c-bsr** to remove the configuration of 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-BSRs exist.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Parameters

*ipv6-address*: Specifies the IPv6 address of a C-BSR. You must specify the IPv6 address of a local IPv6 PIM interface.

**scope** *scope-id*: Specifies an IPv6 admin-scoped zone by its ID in the range of 3 to 15. If you do not specify an IPv6 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 is 126.

**priority** *priority*: Specifies a C-BSR priority in the range of 0 to 255. The default is 64. The greater the value, the higher the priority.

## Usage guidelines

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

```
# 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 ipv6-acl-number | scope scope-id } | holdtime hold-time | priority priority ]
* [ bidir ]

undo c-rp ipv6-address
```

### Default

No C-RPs exist.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

**ipv6-address**: Specifies the IPv6 address of a C-RP. You must specify the IPv6 address of a local IPv6 PIM interface.

**advertisement-interval** *adv-interval*: Specifies a C-RP advertisement message interval in the range of 1 to 65535 seconds. The default is 60 seconds.

**group-policy** *ipv6-acl-number*: Specifies an IPv6 basic ACL number by its number in the range of 2000 to 2999. If you specify an ACL, this command designates the C-RP to IPv6 multicast groups in C-RP advertisement messages that the ACL permits. The C-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 have valid rules.

**scope** *scope-id*: Specifies an IPv6 admin-scoped zone by its ID 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 is 150 seconds.

**priority** *priority*: Specifies a C-RP priority in the range of 0 to 255. The default is 192. The greater the value, the lower the priority.

**bidir**: Specifies IPv6 BIDIR-PIM to which the C-RP is designated. If you do not specify this keyword, the C-RP provides services for IPv6 PIM-SM. This keyword is not supported in the current software version.

### Usage guidelines

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

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

- 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.

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

## Examples

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

```
<Sysname> system-view
[Sysname] acl ipv6 basic 2000
[Sysname-acl-ipv6-basic-2000] rule permit source ff0e:0:1391:: 96
[Sysname-acl-ipv6-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.

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

### Syntax

```
crp-policy ipv6-acl-number
undo crp-policy
```

### Default

No C-RP policy exists, and all C-RP messages are regarded as legal.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*ipv6-acl-number*: Specifies an IPv6 advanced ACL number in the range of 3000 to 3999.

### Usage guidelines

A C-RP policy filters C-RP advertisement messages to guard against C-RP spoofing.

The device uses only the prefixes of the multicast group ranges in advertisement messages to match the destination field in ACL rules. For example, the IPv6 multicast group range in a C-RP advertisement message is FF0E:0:1::/96. If the prefix FF0E:0:1:: is in the range specified by the destination field of an ACL rule, the specified C-RPs are designated to this IPv6 multicast group range.

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

- 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.

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

## Examples

# Configure a C-RP policy so that only devices in the address range of 2001::2/64 can be C-RPs for the groups in the range of FF03::101/64.

```
<Sysname> system-view
[Sysname] acl ipv6 advanced 3000
[Sysname-acl-ipv6-adv-3000] rule permit ipv6 source 2001::2 64 destination ff03::101 64
[Sysname-acl-ipv6-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 IPv6 PIM BSR information.

## Syntax

```
display ipv6 pim bsr-info
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Examples

# Display IPv6 PIM BSR information.

```
<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
Bootstrap timer	Aging timer for the BSR.
Scope-zone expiry timer	Aging timer for the scoped zone.
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 claimed-route [ ipv6-source-address ]
```

### Views

Any view

### Predefined user roles

network-admin  
network-operator

## Parameters

*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.

```
<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, fflle::1)
  (7:11::10, fflle::2)
  (7:11::10, fflle::3)
  (*, fflle::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, fflle::1)
  (7:12::10, fflle::2)
```

**Table 2 Command output**

Field	Description
Route/mask	Route entry. Route types in parentheses include: <ul style="list-style-type: none"><li>• <b>igp</b>—IGP unicast route.</li><li>• <b>egp</b>—EGP unicast route.</li><li>• <b>unicast (direct)</b>—Directly connected unicast route.</li><li>• <b>unicast</b>—Other unicast route, such as static unicast route.</li><li>• <b>mbgp</b>—IPv6 MBGP route.</li></ul>
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 associated with the RPF route and the entry list.

## display ipv6 pim c-rp

Use `display ipv6 pim c-rp` to display C-RP information.

### Syntax

```
display ipv6 pim c-rp [ local ]
```

### Views

Any view

### Predefined user roles

network-admin

network-operator

## Parameters

**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.

```
<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]	This field is not supported in the current software version. The C-RP is an IPv6 BIDIR-PIM RP. This field is not displayed if the C-RP is an IPv6 PIM-SM RP.
C-RP address	IPv6 address of the C-RP. If the C-RP resides on the device where the command is executed, this field displays <b>(local)</b> after the IPv6 address.
Priority	C-RP priority.
HoldTime	C-RP lifetime.
Uptime	Length of time the C-RP has been up: <ul style="list-style-type: none"><li>• <b>w</b>—Weeks.</li><li>• <b>d</b>—Days.</li><li>• <b>h</b>—Hours.</li></ul>
Expires	Remaining lifetime for the C-RP and the 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 interface

Use `display ipv6 pim interface` to display IPv6 PIM information for interfaces.

## Syntax

```
display ipv6 pim interface [ interface-type interface-number ] [ verbose ]
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

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

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

## Examples

# Display brief IPv6 PIM information for all interfaces.

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

**Table 4 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.

```
<Sysname> display ipv6 pim interface vlan-interface 1 verbose
Interface: Vlan-interfaces1, FE80::200:5EFF:FE04:8700
  PIM version: 2
  PIM mode: Sparse
  PIM DR: FE80::200:AFF:FE01:101
  PIM DR Priority (configured): 1
  PIM neighbors 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 5 Command output**

Field	Description
Interface	Interface name and IPv6 address (link-local address).
PIM version	Version of the IPv6 PIM protocol
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.
PIM hello interval	Interval for sending 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 for sending 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 on the interface.
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.

Field	Description
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 neighbor [ ipv6-neighbor-address | interface
interface-type interface-number | verbose ] *
```

### Views

Any view

### Predefined user roles

network-admin  
network-operator

### Parameters

*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.

```
<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 FE80::A01:101:1.

```
<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: Disabled
RPF proxy vector: Disabled
Secondary address(es):
1::1

```

**Table 6 Command output**

Field	Description
Total Number of Neighbors	Total number of IPv6 PIM neighbors.
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 <b>never</b> .
DR-Priority/DR Priority	DR priority of the IPv6 PIM neighbor.
Mode	IPv6 BIDIR-PIM is not supported in the current software version. IPv6 PIM mode. This field displays <b>B</b> if the IPv6 PIM mode is BIDIR-PIM. This field is empty if an IPv6 PIM mode other than IPv6 BIDIR-PIM is used.
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 and reachable, this field displays <b>forever</b> .
LAN delay	IPv6 PIM message propagation delay on the shared-media LAN.
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	This field is not supported in the current software version. Whether IPv6 BIDIR-PIM is enabled.
RPF proxy vector	Whether the RPF proxy vector feature 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 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

*ipv6-group-address*: Specifies an IPv6 multicast group address. The value range for this argument is FFxy::/16, where "x" and "y" represent any hexadecimal numbers in the range of 0 to F. If you do not specify an IPv6 multicast group, this command displays IPv6 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 is 128. For an IPv6 multicast group address, the value range for this argument is 8 to 128. For an IPv6 multicast source address, the value range for this argument is 0 to 128.

**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.
- **rq**: Specifies IPv6 PIM routing entries on the receiving side of the RPT-to-SPT switchover.
- **spt**: Specifies IPv6 PIM routing entries on the SPT.
- **sq**: Specifies IPv6 PIM routing entries on the originating side of the RPT-to-SPT switchover.
- **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. This keyword is not supported in the current software version.
- **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.

```
<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 information:
  Total number of downstream interfaces: 1
    1: Vlan-interface2
      Protocol: pim-sm, UpTime: 02:54:43, Expires: 00:02:47
```

# Display state machine information for the IPv6 PIM routing table.

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

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 information:
Total number of downstream interfaces: 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 7 Command output**

Field	Description
Total 0 (*, G) entries; 1 (S, G) entries	Total number of (*, G) entries, and the total number of (S, G) entries.
(2001::2, FFE3::101)	(S, G) entry.
RP	IPv6 address of the RP.
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"> <li>• <b>ACT</b>—The entry has been used for routing data.</li> <li>• <b>DEL</b>—The entry will be removed.</li> <li>• <b>EXPRUNE</b>—Some outgoing interfaces are pruned by other IPv6 multicast routing protocols.</li> <li>• <b>EXT</b>—The entry contains outgoing interfaces provided by other multicast routing protocols.</li> <li>• <b>LOC</b>—The entry is on a router directly connected to the same subnet with the IPv6 multicast source.</li> <li>• <b>NIIF</b>—The entry contains unknown incoming interfaces.</li> <li>• <b>NONBR</b>—The entry has an IPv6 PIM neighbor lookup failure.</li> <li>• <b>RPT</b>—The entry is on an RPT branch where (S, G) prunes have been sent to the RP.</li> <li>• <b>RQ</b>—The entry is on the receiving side of the RPT-to-SPT switchover.</li> <li>• <b>SPT</b>—The entry is on the SPT.</li> <li>• <b>SQ</b>—The entry is on the originating side of the RPT-to-SPT switchover.</li> <li>• <b>SWT</b>—The entry is in the process of RPT-to-SPT switchover.</li> <li>• <b>WC</b>—The entry contains a wildcard.</li> </ul>
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"> <li>• For a (*, G) entry, if the RPF neighbor is the RP, the field displays <b>NULL</b>.</li> <li>• For an (S, G) entry, if the RPF neighbor is a router that directly connects to the IPv6 multicast source, this field displays <b>NULL</b>.</li> </ul>

Field	Description
Downstream interface information	Information about the downstream interfaces: <ul style="list-style-type: none"> <li>• Total number of downstream interfaces.</li> <li>• Names of the downstream interfaces.</li> <li>• Protocol type on the downstream interfaces.</li> <li>• Uptime of the downstream interfaces.</li> <li>• Expiration time of the downstream interfaces.</li> </ul>

## display ipv6 pim rp-info

Use `display ipv6 pim rp-info` to display RP information.

### Syntax

```
display ipv6 pim rp-info [ ipv6-group-address ]
```

### Views

Any view

### Predefined user roles

network-admin

network-operator

### Parameters

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

```
<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)

Anycast-RP 7:12::1 members:
  Member address      State
  1:1::1              Active
  1:1::2              Local
  1:2::1              Remote
```

# 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

Anycast-RP information:
  RP address          Member address    State
  3:3::1             1:1::1           Active
  3:3::1             1:1::2           Local
  3:3::1             1:2::1           Remote

```

**Table 8 Command output**

Field	Description
BSR RP address is	IPv6 address of the RP.
BSR RP information	Information about the RP.
Group/MaskLen	IPv6 multicast group to which the RP is designated.
[B]	IPv6 BIDIR-PIM is not supported in the current software version. The RP is an IPv6 BIDIR-PIM RP. This field is not displayed if the RP is an IPv6 PIM-SM RP.
RP address	IPv6 address of the RP. If the RP resides on the device where the command is executed, this field displays <b>(local)</b> after the IPv6 address.
Priority	Priority of the RP.
HoldTime	RP lifetime.
Uptime	Length of time the RP has been up.
Expires	Remaining time for the RP lifetime.
Static RP address is/RP address	IPv6 address of the static 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	IPv6 BIDIR-PIM is not supported in the current software version. 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.

Field	Description
Anycast-RP 7:12::1 members	Members of Anycast RP 7:12::1.
Member address	IPv6 address of the Anycast RP member.
State	State of the interface from which the member address originates: <ul style="list-style-type: none"> <li>• <b>Active</b>—Activated local interface.</li> <li>• <b>Local</b>—Inactivated local interface.</li> <li>• <b>Remote</b>—Remote interface.</li> </ul>

## 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 9 Command output**

Field	Description
Received PIM packets	Total number of received IPv6 PIM packets.
Sent PIM packets	Total number of sent IPv6 PIM protocol packets.
Valid	Number of received legal IPv6 PIM protocol packets.
Invalid	Number of received illegal IPv6 PIM protocol packets.

Field	Description
Succeeded	Number of IPv6 PIM protocol packets that were sent successfully.
Failed	Number of IPv6 PIM protocol 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-Adv message statistics.
SRM	State refresh message statistics.
DF	Designated forwarder statistics.

## dscp

Use **dscp** to set the DSCP value for outgoing IPv6 PIM protocol packets.

Use **undo dscp** to restore the default.

### Syntax

```
dscp dscp-value
```

```
undo dscp
```

### Default

The DSCP value is 48 for outgoing IPv6 PIM protocol packets.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*dscp-value*: Specifies a DSCP value in the range of 0 to 63.

### Usage guidelines

The DSCP value is carried in the Traffic Class field of an IPv6 packet to determine the transmission priority of the packet. A greater DSCP value represents a higher priority.

### Examples

```
# Set the DSCP value to 63 for outgoing IPv6 PIM protocol packets.
```

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] dscp 63
```

## hello-option dr-priority (IPv6 PIM view)

Use `hello-option dr-priority` to set the DR priority globally.

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

### Syntax

```
hello-option dr-priority priority  
undo hello-option dr-priority
```

### Default

The 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. The greater the value, the higher the 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.  
<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 IPv6 PIM neighbor lifetime globally.

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

### Syntax

```
hello-option holdtime time  
undo hello-option holdtime
```

### Default

The 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.
<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 IPv6 PIM message propagation delay on a shared-media LAN globally.

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

## Syntax

```
hello-option lan-delay delay
undo hello-option lan-delay
```

## Default

The 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.
<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.

Use `undo hello-option neighbor-tracking` to disable neighbor tracking globally.

### Syntax

```
hello-option neighbor-tracking
undo hello-option neighbor-tracking
```

### Default

Neighbor tracking is disabled.

### 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.
<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 override interval globally.

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

### Syntax

```
hello-option override-interval interval
undo hello-option override-interval
```

### Default

The 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.
<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 joined/pruned state holdtime globally.

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

## Syntax

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

## Default

The joined/pruned state holdtime is 210 seconds.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Parameters

*time*: Specifies a joined/pruned state holdtime 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 set the join/prune interval to be less than the joined/pruned state holdtime timer.

## Examples

```
# Set the global joined/pruned state holdtime to 280 seconds.
<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  
undo ipv6 pim
```

### Views

System view

### Predefined user roles

network-admin

### Examples

```
# Enable IPv6 multicast routing, and enter the IPv6 PIM view.  
<Sysname> system-view  
[Sysname] ipv6 multicast routing  
[Sysname-mrib6] quit  
[Sysname] ipv6 pim  
[Sysname-pim6]
```

## 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

```
# Enable IPv6 multicast routing. Then, enable IPv6 PIM-DM and BFD for IPv6 PIM on  
VLAN-interface 100.
```

```
<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-SM domain border (a bootstrap message boundary).

Use **undo ipv6 pim bsr-boundary** to restore the default.

### Syntax

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

### Default

An interface is not an IPv6 PIM-SM domain border.

### 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.

## Examples

```
# Enable IPv6 multicast routing, and enable IPv6 PIM-DM on VLAN-interface 100.
<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 is 1.

## Views

Interface view

## Predefined user roles

network-admin

## Parameters

*priority*: Specifies a DR priority in the range of 0 to 4294967295. The greater the value, the higher the 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 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 setting 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 on an interface.

## 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

# 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 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 is 210 seconds.

### Views

Interface view

### Predefined user roles

network-admin

### Parameters

*time*: Specifies a joined/pruned state holdtime 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 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.

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

## Syntax

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

## Default

No IPv6 PIM hello policy exists on an interface, and all IPv6 PIM hello messages are regarded as legal.

## Views

Interface view

## Predefined user roles

network-admin

## Parameters

*ipv6-acl-number*: Specifies an IPv6 basic ACL number in the range of 2000 to 2999.

## Usage guidelines

An IPv6 PIM hello policy filters IPv6 PIM hello messages to guard against hello message spoofing.

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

- 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.

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

## Examples

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

```
<Sysname> system-view
[Sysname] acl ipv6 basic 2000
[Sysname-acl-ipv6-basic-2000] rule permit source fe80:101::101 64
[Sysname-acl-ipv6-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 disable IPv6 PIM passive mode on an interface.

## Syntax

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

## Default

IPv6 PIM passive mode is disabled on 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

```
# 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-mrib6] 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 drop 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.

## Examples

```
# 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 the state refresh feature 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 the 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 set 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 (maximum delay for sending a hello message).

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.

## 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 a join or 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 or prune message is 1200 bytes.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Parameters

*size*: Specifies the maximum size of a join or prune message, in the range of 100 to 64000 bytes.

## Examples

```
# Set the maximum size of a join or prune message to 1500 bytes.
<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 restore the default.

## Syntax

```
register-policy ipv6-acl-number
undo register-policy
```

## Default

No IPv6 PIM register policy exists, and all IPv6 PIM register messages are regarded as legal.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Parameters

*ipv6-acl-number*: Specifies an IPv6 advanced ACL number in the range of 3000 to 3999.

## Usage guidelines

An IPv6 PIM register policy enables an RP to filter IPv6 PIM register messages so that the RP is designated only to IPv6 multicast groups permitted by the ACL.

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

- 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.

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

## Examples

# Configure an IPv6 PIM register policy to accept register messages from sources on subnet 3:1::/64 to groups on the subnet FF0E:13::/64.

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

## register-suppression-timeout (IPv6 PIM view)

Use **register-suppression-timeout** to set the register suppression time.

Use **undo register-suppression-timeout** to restore the default.

### Syntax

```
register-suppression-timeout interval
undo register-suppression-timeout
```

### Default

The register suppression time is 60 seconds.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*interval*: Specifies the register suppression time in the range of 1 to 65536 seconds.

### Examples

# Set the register suppression time to 70 seconds.

```
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] register-suppression-timeout 70
```

## register-whole-checksum (IPv6 PIM view)

Use **register-whole-checksum** to configure the device 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 device calculates the checksum based on the register message header.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Examples

```
# Configure the device to calculate the checksum based on an entire register message.
<Sysname> system-view
[Sysname] ipv6 pim
[Sysname-pim6] register-whole-checksum
```

# snmp-agent trap enable pim6

Use **snmp-agent trap enable pim6** to enable SNMP notifications for IPv6 PIM.

Use **undo snmp-agent trap enable pim6** to disable SNMP notifications for IPv6 PIM.

## Syntax

```
snmp-agent trap enable pim6 [ candidate-bsr-win-election |
elected-bsr-lost-election | neighbor-loss ] *
undo snmp-agent trap enable pim6 [ candidate-bsr-win-election |
elected-bsr-lost-election | neighbor-loss ] *
```

## Default

SNMP notifications for IPv6 PIM are enabled.

## Views

System view

## Predefined user roles

network-admin

## Parameters

**candidate-bsr-win-election**: Specifies notifications about winning the BSR election.

**elected-bsr-lost-election**: Specifies notifications about losing the BSR election.

**neighbor-loss**: Specifies notifications about losing neighbors.

## Usage guidelines

If you do not specify an optional keyword, this command enables or disables IPv6 PIM to generate SNMP notifications.

To report critical IPv6 PIM events to an NMS, enable SNMP notifications for IPv6 PIM. For IPv6 PIM event notifications to be sent correctly, you must also configure SNMP as described in *Network Management and Monitoring Configuration Guide*.

## Examples

```
# Disable SNMP notifications for IPv6 PIM.
<Sysname> system-view
[Sysname] undo snmp-agent trap enable pim6
```

## 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.
```

```
<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 restore the default.

### Syntax

```
source-policy ipv6-acl-number
```

```
undo source-policy
```

### Default

No IPv6 multicast source policy exists, The device does not filter IPv6 multicast data packets.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

*ipv6-acl-number*: Specifies an IPv6 basic or advanced ACL number in the range of 2000 to 3999.

### Usage guidelines

An IPv6 multicast source policy filters IPv6 multicast data packets to control information available to downstream receivers.

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

- 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

# Configure an IPv6 multicast source policy to accept IPv6 multicast data from source 3121::1 and to deny the data from source 3121::2.

```
<Sysname> system-view
[Sysname] acl ipv6 basic 2000
[Sysname-acl-ipv6-basic-2000] rule permit source 3121::1 128
[Sysname-acl-ipv6-basic-2000] rule deny source 3121::2 128
[Sysname-acl-ipv6-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 a criterion for an RPT-to-SPT switchover.

Use **undo spt-switch-threshold** to remove criteria for RPT-to-SPT switchovers.

### Syntax

```
spt-switch-threshold { immediacy | infinity } [ group-policy
ipv6-acl-number ]
undo spt-switch-threshold [ immediacy | infinity ] [ group-policy
ipv6-acl-number ]
```

### Default

The first IPv6 multicast data packet triggers an RPT-to-SPT switchover.

### Views

IPv6 PIM view

### Predefined user roles

network-admin

### Parameters

**immediacy**: Triggers an RPT-to-SPT switchover immediately.

**infinity**: Disables RPT-to-SPT switchover.

**group-policy** *ipv6-acl-number*: Specifies an IPv6 basic ACL by its 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 RPT-to-SPT switchover might cause multicast traffic forwarding failures on the source-side DR. When disabling RPT-to-SPT switchover, make sure you fully understand its impact on your network.

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

- 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 RPT-to-SPT switchover on receiver-side DR.

```
<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 ipv6-acl-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

*ipv6-acl-number*: Specifies an IPv6 basic ACL number in the range of 2000 to 2999.

## Usage guidelines

This command defines an IPv6 multicast group range that is used by IPv6 PIM-SSM. The IPv6 PIM-SSM mode applies to IPv6 multicast packets that are permitted by the ACL. The IPv6 PIM-SM mode applies to IPv6 multicast packets that are not permitted by the ACL.

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

- 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.

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

## Examples

```
# Configure the IPv6 SSM group range as FF3E:0:8192::/96.
<Sysname> system-view
[Sysname] acl ipv6 basic 2000
[Sysname-acl-ipv6-basic-2000] rule permit source ff3e:0:8192:: 96
[Sysname-acl-ipv6-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 the hop limit for state refresh messages, in the range of 1 to 255.

## Examples

```
# Set the hop limit for state refresh messages to 45.
<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.
<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 waiting time to accept 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 device waits 30 seconds before it accepts a new state refresh message.

## Views

IPv6 PIM view

## Predefined user roles

network-admin

## Parameters

*time*: Specifies the waiting time to accept a new refresh message, in the range of 1 to 65535 seconds.

## Examples

```
# Set the waiting time to 45 seconds to accept 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 delete a static RP.

### Syntax

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

### Default

No static RPs exist.

### 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.

*ipv6-acl-number*: Specifies an IPv6 basic ACL number in the range of 2000 to 2999. If you specify an ACL, the static 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 have 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. This keyword is not supported in the current software version.

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

- 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 rules in the ACL used by a static RP change, new RPs are dynamically 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 use the same ACL in the commands, 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

# Configure the interface with IPv6 address 2001::2 as a static RP for IPv6 multicast group range FF03::101/64 and give priority to this static RP.

```
<Sysname> system-view
[Sysname] acl ipv6 basic 2001
[Sysname-acl-ipv6-basic-2001] rule permit source ff03::101 64
[Sysname-acl-ipv6-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 hello interval globally.

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

## Syntax

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

## Default

The 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 device 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.

```
<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 join/prune interval globally.

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

### Syntax

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

### Default

The 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 device 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 set the join/prune interval to be less than the joined/pruned state holdtime.

### Examples

```
# Set the global join/prune interval to 80 seconds.
```

```
<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
```