

1 PBR Commands

Command	Function
clear ip pbr statistics	Clear the statistics about packets forwarded by the IPv4 Policy-Based Routing (PBR).
clear ipv6 pbr statistics	Clear the statistics about packets forwarded by the IPv6 PBR.
ip local policy route-map	Apply PBR to packets sent by the local device.
ip policy	Configure redundant backup or load balancing among multiple next hops for PBR.
ip policy route-map	Apply PBR to an interface.
ip policy-source in-interface	Apply source-address-based PBR to IPv4 packets received by a specified interface.
ipv6 local policy route-map	Apply PBR to IPv6 packets sent by the local device.
ipv6 policy	Configure redundant backup or load balancing among multiple next hops for PBR.
ipv6 policy route-map	Apply the IPv6 PBR to an interface.
ipv6 policy-source in-interface	Apply source-address-based PBR to IPv6 packets received by a specified interface.
show ip pbr bfd	Display the correlation between the IPv4 PBR and BFD.
show ip pbr route	Display the IPv4 PBR applied to an interface.
show ip pbr route-map	Display the route map information of IPv4 PBR.
show ip pbr source-route	Display the routing information of the source-address-based IPv4 PBR.
show ip pbr statistics	Display the statistics about packets forwarded by the IPv4 PBR.
show ip policy	Display interfaces for which the PBR is configured and

	the name of the route map applied to each interface.
show ipv6 pbr bfd	Display the correlation between the IPv6 PBR and BFD.
show ipv6 pbr route	Display the IPv6 PBR applied to an interface.
show ipv6 pbr route-map	Display the route map information of IPv6 PBR.
show ipv6 pbr source-route	Display the routing information of the source-address-based IPv6 PBR.
show ipv6 pbr statistics	Display the statistics about packets forwarded by the IPv6 PBR.
show ipv6 policy	Display interfaces for which the IPv6 PBR is configured and the name of the route map applied to each interface.

1.1 clear ip pbr statistics

Function

Run the **clear ip pbr statistics** command to clear the statistics about packets forwarded by the IPv4 Policy-Based Routing (PBR).

Syntax

```
clear ip pbr statistics [ interface interface-type interface-number | local ]
```

Parameter Description

interface *interface-type interface-number*: Clears the statistics about packets forwarded by the IPv4 PBR on the specified interface. If optional parameters are not specified, the statistics about packets forwarded by all interfaces to which the IPv4 PBR applies is cleared.

local: Clears the statistics about packets forwarded by the IPv4 PBR on a local interface.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

You can run this command to clear the statistics about packets forwarded by the IPv4 PBR.

Examples

The following example clears the statistics about packets forwarded by the IPv4 PBR.

```
Hostname# enable
Hostname# clear ip pbr statistics
```

Notifications

N/A

Platform Description

N/A

1.2 clear ipv6 pbr statistics

Function

Run the **clear ipv6 pbr statistics** command to clear the statistics about packets forwarded by the IPv6 PBR.

Syntax

clear ipv6 pbr statistics [**interface** *interface-type interface-number* | **local**]

Parameter Description

interface *interface-type interface-number*: Clears the statistics about packets forwarded by the IPv6 PBR on the specified interface. If optional parameters are not specified, the statistics about packets forwarded by all interfaces to which the IPv6 PBR applies is cleared.

local: Clears the statistics about packets forwarded by the IPv6 PBR on a local interface.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

You can run this command to clear the statistics about packets forwarded by the IPv6 PBR.

Examples

The following example clears the statistics about packets forwarded by the IPv6 PBR.

```
Hostname> enable
Hostname# clear ipv6 pbr statistics
```

Notifications

N/A

Platform Description

N/A

1.3 ip local policy route-map

Function

Run the **ip local policy route-map** command to apply PBR to packets sent by the local device.

Run the **no** form of this command to remove this configuration.

By default, no PBR is applied to the local device.

Syntax

```
ip local policy route-map route-map-name
```

```
no ip local policy route-map
```

Parameter Description

route-map-name: Name of the route map.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command enables PBR for only IP packets that are sent by the local device and match the policy. It is not applicable to IP packets received by the local device.

To apply PBR, you must specify a route map for PBR, and create this map. A route map consists of multiple policies, and one or more match rules and relevant actions are defined for each policy. After PBR is applied to an interface, all packets received by the interface are checked. Packets that do not match any policy in the route map are routed and forwarded as usual. Packets that match a policy in the route map are processed based on the action defined in the policy.

Examples

The following example routes all packets from the source address 192.168.217.10 through the GigabitEthernet 0/1 interface.

- (1) Step 1: Configure ACL 1 to match packets with the source IP address 192.168.217.10.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# access-list 1 permit host 192.168.217.10
```

- (2) Step 2: Configure the route map **lab1**, and send packets that matches ACL 1 from the GigabitEthernet 0/1 interface.

```
Hostname(config)# route-map lab1 permit 10
Hostname(config-route-map)# match ip address 1
Hostname(config-route-map)# set interface GigabitEthernet 0/1
Hostname(config-route-map)# exit
```

- (3) Step 3: Apply PBR to packets sent by the local device.

```
Hostname(config)# ip local policy route-map lab1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.4 ip policy

Function

Run the **ip policy** command to configure redundant backup or load balancing among multiple next hops for PBR.

Run the **no** form of this command to restore the forwarding mode of PBR.

By default, multiple next hops of the PBR adopt the redundant backup mode.

Syntax

ip policy { load-balance | redundancy }

no ip policy

Parameter Description

load-balance: Adopts load balancing.

redundance: Adopts redundant backup.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can run the **set ip next-hop** command to configure multiple next hops. The next-hop selection policy configured by this command is redundant backup or load balancing. When redundant backup is configured, only the first parsed next hop of PBR takes effect. When load balancing is configured, multiple parsed next hops of PBR take effect. You can configure up to 8 next hops in the case of Weighted Cost Multiple Path (WCMP), or 32 next hops in the case of Equal Cost Multiple Path (ECMP).

▲ Caution

The next hop refers to the next hop of which the MAC address is learned.

Examples

The following example configures multiple next hops in the route map and sets the redundant backup mode in global configuration mode so that only the first next hop takes effect after PBR is applied to GigabitEthernet 0/1.

- (1) Step 1: Configure ACL 1 to match the traffic from the IP address 10.0.0.1, and ACL 2 to match the traffic from the IP address 20.0.0.1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# access-list 1 permit host 10.0.0.1
Hostname(config)# access-list 2 permit host 20.0.0.1
```

- (2) Step 2: Configure the sequence number 10 for the route map **lab1**, and set multiple next hops for traffic that matches ACL 1. Configure the sequence number 20 for the route map **lab1**, and set multiple next hops for traffic that matches ACL 2.

```
Hostname(config)# route-map lab1 permit 10
Hostname(config-route-map)# match ip address 1
Hostname(config-route-map)# set ip next-hop 196.168.4.6
Hostname(config-route-map)# set ip next-hop 196.168.4.7
Hostname(config-route-map)# set ip next-hop 196.168.4.8
Hostname(config-route-map)# exit
Hostname(config)# route-map lab1 permit 20
Hostname(config-route-map)# match ip address 2
Hostname(config-route-map)# set ip next-hop 196.168.5.6
Hostname(config-route-map)# set ip next-hop 196.168.5.7
Hostname(config-route-map)# set ip next-hop 196.168.5.8
Hostname(config-route-map)# exit
```

- (3) Step 3: Apply PBR to the interface, and configure the redundant backup mode.

```
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if)# ip policy route-map lab1
Hostname(config-if)# exit
Hostname(config)# ip policy redundancy
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **set ip next-hop** (routing policy)

1.5 ip policy route-map

Function

Run the **ip policy route-map** command to apply PBR to an interface.

Run the **no** form of this command to remove this configuration.

By default, no PBR is configured on an interface.

Syntax

ip policy route-map *route-map*

no ip policy route-map

Parameter Description

route-map: Name of the route map.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

PBR must be applied to a specified interface and to only packets received by this interface. You can configure only one route map for an interface on a device. If you configure multiple route maps for the same interface, the latest route map overwrites the previous route maps.

To apply PBR, you must specify a route map for PBR, and create this map. A route map consists of multiple policies, and one or more match rules and relevant actions are defined for each policy. After PBR is applied to an interface, all packets received by the interface are checked. Packets that do not match any policy in the route map are routed and forwarded as usual. Packets that match a policy in the route map are processed based on the action defined in the policy.

Examples

The following example configures PBR for packets received by GigabitEthernet 0/0, sets the next hop of packets with the source address 10.0.0.1 to **196.168.4.6** and the next hop of packets with the source address 20.0.0.1 to **196.168.5.6**; otherwise, packets are normally forwarded.

- (1) Step 1: Configure ACL 1 to match the traffic from the IP address 10.0.0.1, and ACL 2 to match the traffic from the IP address 20.0.0.1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# access-list 1 permit host 10.0.0.1
Hostname(config)# access-list 2 permit host 20.0.0.1
```

- (2) Step 2: Configure the sequence number 10 for the route map **lab1**, and set the next hop of traffic that matches ACL 1 to **196.168.4.6**. Configure the sequence number 20 for route map **lab1**, and set the next hop of traffic that matches ACL 2 to **196.168.5.6**.

```
Hostname(config)# route-map lab1 permit 10
Hostname (config-route-map)# match ip address 1
Hostname(config-route-map)# set ip next-hop 196.168.4.6
Hostname(config-route-map)# exit
Hostname(config)# route-map lab1 permit 20
Hostname(config-route-map)# match ip address 2
Hostname(config-route-map)# set ip next-hop 196.168.5.6
Hostname(config-route-map)# exit
```

- (3) Step 3: Apply PBR to the interface.

```
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if)# ip policy route-map lab1
Hostname(config-if)# exit
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.6 ip policy-source in-interface

Function

Run the **ip policy-source in-interface** command to apply source-address-based PBR to IPv4 packets received by a specified interface.

Run the **no** form of this command to remove this configuration.

By default, no source-address-based PBR takes effect on an interface.

Syntax

```
ip policy-source in-interface interface-type interface-number sequence { source-address mask | source-address/mask } { [ default ] next-hop [ ipv4-address [ weight ] ]&<1-4> | [ default ] interface { out-interface-type out-interface-number }&<1-4> }
```

```
no ip policy-source in-interface interface-type sequence [ { source-address mask | source-address/mask } [ [ default ] next-hop [ ipv4-address [ weight ] ]&<1-4> | [ default ] interface { out-interface-type out-interface-number } &<1-4> ] ]
```

Parameter Description

interface-type interface-number: Type and number of the interface to which source-address-based PBR is applied.

sequence: Sequence number of a policy. A smaller sequence number indicates a higher priority.

source-address: IPv4 address.

mask: Mask of the IPv4 address.

default: If this parameter is configured, the system preferentially uses the route forwarding table to forward packets; otherwise, the system preferentially use PBR to forward packets.

next-hop [*ipv4-address* [*weight*]]&<1-4>: You can enter up to four next-hop IPv4 addresses and weight values.

ipv4-address: IPv4 address of the next hop.

weight: Weight of the next hop. The value range is from 1 to 8, and the default value is 1.

interface *out-interface-type out-interface-number*: Output interface type and number of the next hop.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can specify multiple **ip policy-source in-interface** commands for the same interface. The sequence numbers of different source addresses must be different. A smaller sequence number indicates a higher priority of the source-address-based PBR.

If the sequence numbers are the same, the priorities of next hop types are as follows: **vrf vrf-name > next-hop ipv4-address > interface out-interface-type > default next-hop ipv4-address > default interface out-interface-type**.

The source-address-based PBR has a lower priority than the interface-based PBR. If the source-address-based PBR and the interface-based PBR are applied to the same interface, only the interface-based PBR takes effect.

Examples

The following example configures PBR for packets received by GigabitEthernet 0/0, sets the next hop of packets with the source address 10.0.0.2 to **196.168.1.2** and the next hop of packets with the source address 20.0.0.2 to **196.168.2.2**; otherwise, packets are normally forwarded.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip policy-source in-interface gigabitEthernet 0/0 1 10.0.0.2
255.255.255.255 next-hop 196.168.1.2
Hostname(config)# ip policy-source in-interface gigabitEthernet 0/0 2 20.0.0.2
255.255.255.255 next-hop 196.168.2.2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.7 ipv6 local policy route-map

Function

Run the **ipv6 local policy route-map** command to apply PBR to IPv6 packets sent by the local device.

Run the **no** form of this command to disable this feature.

By default, no IPv6 PBR is applied to the local device.

Syntax

ipv6 local policy route-map *route-map-name*

no ipv6 local policy route-map

Parameter Description

route-map-name: Name of the route map applied to the local PBR. It is configured by the **route-map** command.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command enables PBR for only IPv6 packets (such as **ping** packets) that are sent by the local device and match the policy. It is not applicable to IPv6 packets received by the local device.

To apply PBR, you must specify a route map for PBR, and create this map. A route map consists of multiple policies, and one or more match rules and relevant actions are defined for each policy. After PBR is applied to an interface, all packets received by the interface are checked. Packets that do not match any policy in the route map are routed and forwarded as usual. Packets that match a policy in the route map are processed based on the action defined in the policy.

Examples

The following example applies PBR to a local device. Packets that are routed from 2003:1000::10/80 to 2001:100::/64 and match the ACL **aaa** are sent to the device 2003:1001::2.

- (1) Configure the ACL **aaa** to match packets that are routed from 2003:1000::10/80 to 2001:100::/64.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 access-list aaa
Hostname(config-ipv6-acl)# permit ipv6 2003:1000::10/80 2001:100::/64
Hostname(config-ipv6-acl)# exit
```

- (2) Configure the route map **pbr-aaa**, and set the next hop of packets that match the ACL **aaa** to **2003:1001::2**.

```
Hostname(config)# route-map pbr-aaa permit 10
Hostname(config-route-map)# match ipv6 address aaa
Hostname(config-route-map)# set ipv6 next-hop 2003:1001::2
Hostname(config-route-map)# exit
```

- (3) Apply PBR to the device.

```
Hostname(config)# ipv6 local policy route-map pbr-aaa
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.8 ipv6 policy

Function

Run the **ipv6 policy** command to configure redundant backup or load balancing among multiple next hops for PBR.

Run the **no** form of this command to restore the default configuration.

By default, multiple next hops of the IPv6 PBR adopt the redundant backup mode.

Syntax

```
ipv6 policy { load-balance | redundancy }
```

```
no ipv6 policy
```

Parameter Description

load-balance: Adopts load balancing.

redundance: Adopts redundant backup.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can run the **set ipv6 next-hop** command to configure multiple next hops. The next-hop selection policy configured by this command is redundant backup or load balancing. When redundant backup is configured, only the first parsed next hop of PBR takes effect. When load balancing is configured, multiple parsed next hops of PBR take effect. You can configure up to 8 next hops in the case of Weighted Cost Multiple Path (WCMP), or 32 next hops in the case of Equal Cost Multiple Path (ECMP).

▲ Caution

The next hop refers to the next hop of which the MAC address is learned.

Examples

The following example configures the load balancing mode among multiple next hops.

- (1) Configure ACL 1 to match the traffic from the IP address 1000::1, and ACL 2 to match the traffic from the IP address 2000::1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 access-list 1
Hostname(config-ipv6-acl)# permit ipv6 1000::1 any
Hostname(config-ipv6-acl)# exit
Hostname(config)# ipv6 access-list 2
Hostname(config-ipv6-acl)# permit ipv6 2000::1 any
Hostname(config-ipv6-acl)# exit
```

- (2) Configure the sequence number 10 for the route map **lab1**, and set multiple next hops for traffic that matches ACL 1. Configure the sequence number 20 for the route map **lab1**, and set multiple next hops for traffic that matches ACL 1.

```
Hostname(config)# route-map lab1 permit 10
Hostname(config-route-map)# match ipv6 address 1
Hostname(config-route-map)# set ipv6 next-hop 2002::1
Hostname(config-route-map)# set ipv6 next-hop 2002::2
Hostname(config-route-map)# set ipv6 next-hop 2002::3
Hostname(config-route-map)# exit
Hostname(config)# route-map lab1 permit 20
Hostname(config-route-map)# match ipv6 address 2
Hostname(config-route-map)# set ipv6 next-hop 2002::5
Hostname(config-route-map)# set ipv6 next-hop 2002::6
Hostname(config-route-map)# set ipv6 next-hop 2002::7
Hostname(config-route-map)# exit
```

- (3) Apply PBR to the interface.

```
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if)# ipv6 policy route-map lab1
Hostname(config-if)# exit
Hostname(config)# ipv6 policy load-balance
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.9 ipv6 policy route-map

Function

Run the **ipv6 policy route-map** command to apply the IPv6 PBR to an interface.

Run the **no** form of this command to remove this configuration.

By default, no IPv6 PBR is configured on an interface.

Syntax

ipv6 policy route-map *route-map-name*

no ipv6 policy route-map

Parameter Description

route-map-name: Name of the route map, which is configured by the **route-map** command.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

The IPv6 PBR applied to an interface takes effect on only IPv6 packets received by this interface. You can configure only one IPv6 route map for an interface on a device. If you configure multiple route maps for the same interface, the latest route map overwrites the previous route maps.

To apply PBR, you must specify a route map for PBR, and create this map. A route map consists of multiple policies, and one or more match rules and relevant actions are defined for each policy. After PBR is applied to an interface, all packets received by the interface are checked. Packets that do not match any policy in the route map are routed and forwarded as usual. Packets that match a policy in the route map are processed based on the action defined in the policy.

Rules in the route map used for the IPv6 PBR must be supported by IPv6; otherwise, these rules do not take effect.

Examples

The following example configures PBR for IPv6 packets received by GigabitEthernet 0/0, sets the next hop of packets with the source address 10::/64 to **2000::1** and the next hop of packets with the source address 20::/64 to **2000::2**; otherwise, packets are normally forwarded.

- (1) Configure the ACL **acl_for_pbr1** to match the traffic from the source address 10::/64, and the ACL **acl_for_pbr2** to match the traffic from the source address 20::/64.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 access-list acl_for_pbr1
Hostname (config-ipv6-acl)# permit ipv6 10::/64 any
Hostname (config-ipv6-acl)# exit
Hostname(config)# ipv6 access-list acl_for_pbr2
Hostname (config-ipv6-acl)# permit ipv6 20::/64 any
Hostname (config-ipv6-acl)# exit
```

- (2) Configure the sequence number 10 for the route map **rm_pbr**, and set the next hop of traffic that matches the ACL **acl_for_pbr1** to **2000::1**. Configure the sequence number 20 for the route map **rm_pbr**, and set the next hop of traffic that matches the ACL **acl_for_pbr2** to **2000::2**.

```
Hostname(config)# route-map rm_pbr permit 10
Hostname (config-route-map)# match ipv6 address acl_for_pbr1
Hostname(config-route-map)# set ipv6 next-hop 2000::1
Hostname(config-route-map)# exit
Hostname(config)# route-map rm_pbr permit 20
Hostname(config-route-map)# match ipv6 address acl_for_pbr2
Hostname(config-route-map)# set ipv6 next-hop 2000::2
Hostname(config-route-map)# exit
```

- (3) Apply the route map to the interface.

```
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if)# no switchport
Hostname(config-if)# ipv6 policy route-map rm_pbr
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.10 ipv6 policy-source in-interface

Function

Run the **ipv6 policy-source in-interface** command to apply source-address-based PBR to IPv6 packets received by a specified interface.

Run the **no** form of this command to remove this configuration.

By default, no source-address-based IPv6 PBR takes effect on an interface.

Syntax

```
ipv6 policy-source in-interface interface-type interface-number sequence source-address/prefix-length { [ default ] next-hop [ ipv6-address [ weight ] ]&<1-4> | [ default ] interface out-interface-type&<1-4> }
```

```
no ipv6 policy-source in-interface interface-type sequence [source-address/prefix-length [ [ default ] next-hop [ipv6-address [ weight ] ]&<1-4> | [ default ] interface out-interface-type&<1-4> ] ]
```

Parameter Description

interface-type interface-number: Type and number of the interface to which source-address-based PBR is applied.

sequence: Sequence number of a policy. A smaller sequence number indicates a higher priority.

source-address: IPv6 address.

prefix-length: Prefix length of the IPv6 address.

default: If this parameter is configured, the system preferentially uses the route forwarding table to forward packets; otherwise, the system preferentially uses PBR to forward packets.

next-hop [*ipv6-address* [*weight*]]&<1-4>: You can enter up to four next-hop IPv6 addresses and weight values.

ipv6-address: IPv6 address of the next hop.

weight: Weight of the next hop. The value range is from 1 to 8, and the default value is 1.

interface *out-interface-type*: Output interface type of the next hop.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can specify multiple **ipv6 policy-source in-interface** commands for the same interface. The sequence numbers of different source addresses must be different. A smaller sequence number indicates a higher priority of the source-address-based PBR.

If the sequence numbers are the same, the priorities of next hop types are as follows: **vrf vrf-name > next-hop ipv6-address > interface out-interface-type > default next-hop ipv6-address > default interface out-interface-type**.

The source-address-based PBR has a lower priority than the interface-based PBR. If the source-address-based PBR and the interface-based PBR are applied to the same interface, only the interface-based PBR takes effect.

Examples

The following example configures PBR for IPv6 packets received by GigabitEthernet 0/0, sets the next hop of packets with the source address 10::/64 to **2000:1** and the next hop of packets with the source address 20::/64 to **2000::2**; otherwise, packets are normally forwarded.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 policy-source in-interface gigabitEthernet 0/0 2 10::/64
next-hop 2000::1
Hostname(config)# ipv6 policy-source in-interface gigabitEthernet 0/0 2 20::/64
next-hop 2000::2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.11 show ip pbr bfd

Function

Run the **show ip pbr bfd** command to display the correlation between the IPv4 PBR and BFD.

Syntax

```
show ip pbr bfd
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the correlation between the IPv4 PBR and BFD.

Examples

The following example displays the correlation between the IPv4 PBR and BFD.

```

Hostname> enable
Hostname# show ip pbr bfd
VRF ID  Ifindex  Host           State  Refcnt
      0      13  192.168.8.100  Up     2

```

Table 1-1Output Fields of the show ip pbr bfd Command

Field	Description
VRF ID	VRF of the interface carrying the BFD neighbor correlated with PBR
Ifindex	Index of the interface carrying the BFD neighbor correlated with PBR
Host	IPv4 address of the peer
State	Up or down state of the BFD neighbor correlated with PBR
Refcnt	Neighbor reference count

Notifications

N/A

Platform Description

N/A

1.12 show ip pbr route

Function

Run the **show ip pbr route** command to display the IPv4 PBR applied to an interface.

Syntax

```
show ip pbr route [ interface interface-type interface-number | local ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv4 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv4 PBR is applied are displayed.

local: Displays the IPv4 PBR applied to a local interface.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the PBR configured for an interface.

Examples

The following example displays the IPv4 PBR applied to an interface.

```
Hostname> enable
Hostname# show ip pbr route
PBR IPv4 Route Summay : 1
Interface           : GigabitEthernet 0/1
  Sequence          : 10
  ACL[0]            : 2900
ACL_CLS[0]          : 0
  Min Length        : None
  Max Length        : None
```

```

VRF ID      : 0
Route Flags :
  Route Type : PBR
  Direct     : Permit
  Priority   : High
  Tos_Dscp  : None
  Precedence : None
Tos_Dscp    : 0
Precedence  : 0
Mode        : redundance
Nexthop Count : 1
  Nexthop[0] : 192.168.8.100
  Weight[0]  : 1
  Ifindex[0] : 2

```

Table 1-1 Output Fields of the show ip pbr route Command

Field	Description
PBR IPv4 Route Summary	Number of IPv4 PBR entries.
Interface	Interface applying the PBR.
Sequence	Sequence number corresponding to the PBR.
ACL	ID of the ACL used in the matching rule.
ACL_CLS	Type of the ACL used in the matching rule, for example, the IP standard ACL.
Min Length	Minimum packet length set in the matching length
Max Length	Maximum packet length set in the matching length.
VRF ID	ID of the VRF correlated with the interface.
Route Flags	PBR flag.
Route Type	PBR type. The value PBR indicates a PBR route, and Normal indicates a common route.
Direct	PBR matching mode, which is permit or deny .
Priority	PBR priority, which is High or Low .
Tos_Dscp	Indicates whether to configure the ToS or DSCP rule.

Field	Description
Precedence	Indicates whether to configure the set ip precedence rule.
Mode	Configures the redundant backup or load balancing mode for the next hop.
Nexthop Count	Configures the number of next hops. Up to 32 next hops are configured for ECMP.
Nexthop	Configures the IPv4 address of the next hop.
Weight	Configures the weight value of the next hop.
Ifindex	Configures the index of the output interface corresponding to the next hop.

Notifications

N/A

Platform Description

N/A

1.13 show ip pbr route-map

Function

Run the **show ip pbr route-map** command to display the route map information of IPv4 PBR.

Syntax

```
show ip pbr route-map route-map-name
```

Parameter Description

route-map-name: Name of the route map, which is configured by the **route-map** command.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the route map information of IPv4 PBR.

Examples

The following example displays the route map information of IPv4 PBR.

```

Hostname> enable
Hostname# show ip pbr route-map rm
Pbr VRF: GLOBAL, ID: 0
  Forward Mode: redundance
  Forwarding: On

route-map rm
  route-map index: sequence 10, permit
  Match rule:
    ACL ID :      0, ACL CLS: 0, Name: acl1
  Set rule:
    IPv4 Nexthop: 192.168.8.100, (VRF Name: , ID: 0), Weight: 0
    PBR state info ifx: GigabitEthernet 0/1, Connected: True, Track State: Up

```

Table 1-1 Output Fields of the show ip pbr route-map rm Command

Field	Description
Pbr VRF	Name and ID of the VRF.
Forward Mode	Configures the load balancing or redundant backup mode for the next hop.
Forwarding	Indicates whether to enable IP route forwarding.
Route-map index	Sequence number and type of the route submap.
Match rule	Matching rule.
Set rule	Set rule.
PBR state info	PBR private data, for example, the output interface and connection status of the next hop.

Notifications

N/A

Platform Description

N/A

1.14 show ip pbr source-route

Function

Run the **show ip pbr source-route** command to display the routing information of the source-address-based IPv4 PBR.

Syntax

```
show ip pbr source-route [ interface interface-type interface-number ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv4 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv4 PBR is applied are displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the configured source-address-based PBR.

Examples

The following example displays the routing information of the source-address-based IPv4 PBR.

```
Hostname> enable
Hostname# show ip pbr source-route
PBR IPv4 Source Route
Interface      : GigabitEthernet 0/1
  Sequence     : 10
  Source address : 10.1.1.1/24
  VRF ID       : 0
  Route Flags  :
  Route Type   : PBR
  Direct       : Permit
  Priority      : High
  Match_ipaddr : Exist
  Mode         : redundance
  Nexthop Count : 1
  Nexthop[0]   : 192.168.8.100
  Weight[0]    : 1
```



```
Ifindex[0] : 2
```

Table 1-1 Output Fields of the show ip pbr source-route Command

Field	Description
Interface	Interface applying the PBR.
Sequence	Sequence number corresponding to the PBR.
VRF ID	ID of the VRF correlated with the interface.
Route Flags	PBR flag.
Route Type	PBR type. The value PBR indicates a PBR route, and Normal indicates a common route.
Direct	PBR matching mode, which is permit or deny .
Priority	PBR priority, which is High or Low .
Mode	Configures the redundant backup or load balancing mode for the next hop.
Nexthop Count	Configures the number of next hops. Up to 32 next hops are configured for ECMP.
Nexthop	Configures the IPv4 address of the next hop.
Weight	Configures the weight value of the next hop.
Ifindex	Configures the index of the output interface corresponding to the next hop.

Notifications

N/A

Platform Description

N/A

1.15 show ip pbr statistics**Function**

Run the **show ip pbr statistics** command to display the statistics about packets forwarded by the IPv4 PBR.

Syntax

```
show ip pbr statistics [ interface interface-type interface-number | local ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv4 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv4 PBR is applied are displayed.

local: Displays the IPv4 PBR applied to a local interface.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the statistics about packets forwarded by the IPv4 PBR.

Examples

The following example displays the statistics about packets forwarded by the IPv4 PBR.

```

Hostname> enable
Hostname# show ip pbr statistics
IPv4 Policy-based route statistic
  gigabitEthernet 0/1
    statistics : 10
  
```

Table 1-1 Output Fields of the show ip pbr statistics Command

Field	Description
IPv4 Policy-based route statistic	Statistics about packets that match IPv4 PBR in the software
statistics	Interface statistics

Notifications

N/A

Platform Description

N/A

1.16 show ip policy

Function

Run the **show ip policy** command to display interfaces for which the PBR is configured and the name of the route map applied to each interface.

Syntax

```
show ip policy [ route-map-name ]
```

Parameter Description

route-map-name: The interfaces applying the route map specified by this parameter. If optional parameters are not specified, all interfaces configured with the PBR are displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the PBR configured in the current system.

Examples

The following example displays all the interfaces for which the PBR is configured and the name of the route map applied to each interface.

```

Hostname> enable
Hostname# show ip policy
Banlance Mode: redundance
Interface          Route map
local              test
GigabitEthernet 0/0  test

```

Table 1-1Output Fields of the show ip policy Command

Field	Description
Balance Mode:	Running mode among multiple next hops
Interface	Name of the interface
Route map	Name of the route map

Notifications

N/A

Platform Description

N/A

1.17 show ipv6 pbr bfd**Function**

Run the **show IPv6 pbr bfd** command to display the correlation between the IPv6 PBR and BFD.

Syntax

```
show ipv6 pbr bfd
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the correlation between the IPv6 PBR and BFD.

Examples

The following example displays the correlation between the IPv6 PBR and BFD.

```

Hostname> enable
Hostname# show ipv6 pbr bfd
VRF ID  Ifindex  Host                State  Refcnt
-----  -
0       13       2000::2            Up     1

```

Table 1-1 Output Fields of the show ipv6 pbr bfd Command

Field	Description
VRF ID	VRF of the interface carrying the BFD neighbor correlated with PBR
Ifindex	Index of the interface carrying the BFD neighbor correlated with PBR
Host	IPv6 address of the peer

Field	Description
State	Up or down state of the BFD neighbor correlated with PBR
Refcnt	Neighbor reference count

Notifications

N/A

Platform Description

N/A

1.18 show ipv6 pbr route

Function

Run the **show IPv6 pbr route** command to display the IPv6 PBR applied to an interface.

Syntax

```
show ipv6 pbr route [ interface interface-type interface-number | local ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv6 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv6 PBR is applied are displayed.

local: Displays the IPv6 PBR applied to a local interface.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the PBR configured for an interface.

Examples

The following example displays the IPv6 PBR applied to an interface.

```
Hostname> enable
```

```

Hostname# show ipv6 pbr route
PBR IPv6 Route Summary : 1
Interface      : GigabitEthernet 0/2
  Sequence     : 10
  ACL[0]       : 2901
ACL_CLS[0]    : 0
  Min Length   : None
  Max Length   : None
  VRF ID       : 0
  Route Flags  :
    Route Type : PBR
    Direct     : Permit
    Priority    : High
    Tos_Dscp   : None
    Precedence : None
  Tos_Dscp     : 0
  Precedence   : 0
  Mode         : redundance
  Nexthop Count : 1
    Nexthop[0] : 10::1
    Weight[0]  : 1
    Ifindex[0] : 3

```

Table 1-1Output Fields of the show ipv6 pbr route Command

Field	Description
PBR IPv4 Route Summary	Number of IPv4 PBR entries.
Interface	Interface applying the PBR.
Sequence	Sequence number corresponding to the PBR.
ACL	ID of the ACL used in the matching rule.
ACL_CLS	Type of the ACL used in the matching rule, for example, the IP standard ACL.
Min Length	Minimum packet length set in the matching length.
Max Length	Maximum packet length set in the matching length.
VRF ID	ID of the VRF correlated with the interface.
Route Flags	PBR flag.

Field	Description
Route Type	PBR type. The value PBR indicates a PBR route, and Normal indicates a common route.
Direct	PBR matching mode, which is permit or deny .
Priority	PBR priority, which is High or Low .
Tos_Dscp	Indicates whether to configure the ToS or DSCP rule.
Precedence	Indicates whether to configure the set ip precedence rule.
Mode	Configures the redundant backup or load balancing mode for the next hop.
Nexthop Count	Configures the number of next hops. Up to 32 next hops are configured for ECMP.
Nexthop	Configures the IPv4 address of the next hop.
Weight	Configures the weight value of the next hop.
Ifindex	Configures the index of the output interface corresponding to the next hop.

Notifications

N/A

Platform Description

N/A

1.19 show ipv6 pbr route-map

Function

Run the **show IPv6 pbr route-map** command to display the route map information of IPv6 PBR.

Syntax

```
show ipv6 pbr route-map route-map-name
```

Parameter Description

route-map-name: Name of the route map, which is configured by the **route-map** command.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the route map information of IPv6 PBR.

Examples

The following example displays the route map information of IPv6 PBR.

```

Hostname> enable
Hostname# show ipv6 pbr route-map rm6
Pbr VRF: GLOBAL, ID: 0
  Forward Mode: redundance
  Forwarding: On

route-map rm6
  route-map index: sequence 10, permit
Match rule:
  ACL ID :      0, ACL CLS: 0, Name: acl6
Set rule:
  IPv6 Nexthop: 10::1, (VRF Name: , ID: 0), Weight: 0
  PBR state info ifx: GigabitEthernet 0/0, Connected: True, Track State: Up

```

Table 1-1show ipv6 pbr route-map rm6:

Field	Description
Pbr VRF	Name and ID of the VRF.
Forward Mode	Configures the load balancing or redundant backup mode for the next hop.
Forwarding	Indicates whether to enable IP route forwarding.
Route-map index	Sequence number and type of the route submap.
Match rule	Matching rule.
Set rule	Set rule.
PBR state info	PBR private data, for example, the output interface and connection status of the next hop.

Notifications

N/A

Platform Description

N/A

1.20 show ipv6 pbr source-route

Function

Run the **show ipv6 pbr source-route** command to display the routing information of the source-address-based IPv6 PBR.

Syntax

```
show ipv6 pbr source-route [ interface interface-type interface-number ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv6 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv6 PBR is applied are displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the configured source-address-based PBR.

Examples

The following example displays the routing information of the source-address-based IPv6 PBR.

```
Hostname> enable
Hostname# show ipv6 pbr source-route
PBR IPv6 Source Route
Interface      : GigabitEthernet 0/1
Sequence      : 10
Source address : 1000::1/64
VRF ID        : 0
Route Flags   :
Route Type    : PBR
Direct       : Permit
Priority      : High
Match_ipaddr : Exist
Mode         : redundance
```

```

Nexthop Count   : 1
Nexthop[0]     : 1001::2
Weight[0]      : 1
Ifindex[0]     : 3

```

Table 1-1Output Fields of the show ipv6 pbr source-route Command

Field	Description
Interface	Interface applying the PBR.
Sequence	Sequence number corresponding to the PBR.
VRF ID	ID of the VRF correlated with the interface.
Route Flags	PBR flag.
Route Type	PBR type. The value PBR indicates a PBR route, and Normal indicates a common route.
Direct	PBR matching mode, which is permit or deny .
Priority	PBR priority, which is High or Low .
Mode	Configures the redundant backup or load balancing mode for the next hop.
Nexthop Count	Configures the number of next hops. Up to 32 next hops are configured for ECMP.
Nexthop	Configures the IPv4 address of the next hop.
Weight	Configures the weight value of the next hop.
Ifindex	Configures the index of the output interface corresponding to the next hop.

Notifications

N/A

Platform Description

N/A

1.21 show ipv6 pbr statistics**Function**

Run the **show ipv6 pbr statistics** command to display the statistics about packets forwarded by the IPv6 PBR.

Syntax

```
show ipv6 pbr statistics [ interface interface-type interface-number | local ]
```

Parameter Description

interface *interface-type interface-number*: Displays the IPv4 PBR applied to the specified interface. If optional parameters are not specified, all interfaces to which the IPv4 PBR is applied are displayed.

local: Displays the IPv4 PBR applied to a local interface.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to verify the statistics about packets forwarded by the IPv6 PBR.

Examples

The following example displays the statistics about packets forwarded by the IPv6 PBR.

```
Hostname> enable
Hostname# show ipv6 pbr statistics
IPv6 Policy-based route statistic
  gigabitEthernet 0/1
    statistics : 20
```

Table 1-1 Output Fields of the show ipv6 pbr statistics Command

Field	Description
IPv6 Policy-based route statistic	Statistics about packets that match IPv6 PBR in the software
statistics	Interface statistics

Notifications

N/A

Platform Description

N/A

1.22 show ipv6 policy

Function

Run the **show IPv6 policy** command to display interfaces for which the IPv6 PBR is configured and the name of the route map applied to each interface.

Syntax

```
show ipv6 policy [ route-map-name ]
```

Parameter Description

route-map-name: Name of the route map used for PBR.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

You can run this command to check the layer-3 interfaces that apply the IPv6 PBR in the current system.

Examples

The following example displays all the interfaces for which the IPv6 PBR is configured and the name of the route map applied to each interface.

```

Hostname> enable
Hostname# show ipv6 policy
Balance Mode: redundance
Interface          Route map
VLAN 1             RM_for_Vlan_1
VLAN 2             RM_for_Vlan_2

```

Table 1-1 Output Fields of the show ipv6 policy Command

Field	Description
Balance Mode	Running mode of the PBR on the current device
Interface	Interface applying the PBR
Route map	Name of the route map applied to the interface.

Notifications

N/A

Platform Description

N/A