

1 Static Route Commands

Command	Function
clear ip route arp scan times	Clear the Address Resolution Protocol (ARP) request transmission count and start counting again.
ip default-gateway	Configure a default gateway.
ip default-network	Configure a default network.
ip fast-reroute static route-map	Enable static fast reroute.
ip route	Configure static route.
ip route scan arp interval	Set the interval for actively sending ARP requests when ARP fails after correlation of static routes with ARP is configured.
ip route scan arp times	Set the times of actively sending ARP requests when ARP fails after correlation of static routes with ARP is configured.
ip route static bfd	Configure correlation of static routes with BFD.
ip route static inter-vrf	Allow static routing across VRFs.
ip static route-limit	Configure the maximum number of static routes.
ipv6 default-gateway	Configure a default gateway on a Layer-2 device.
ipv6 fast-reroute static route-map	Enable static fast reroute.
ipv6 route	Configure IPv6 static route.
ipv6 route static bfd	Configure correlation of static routes with BFD.
ipv6 static route-limit	Configure the maximum number of static routes.
maximum routes	Limit the maximum number of routes in the default VRF.
show ip redirects	Display the default gateway.
show ipv6 redirects	Display the IPv6 default gateway.

1.1 clear ip route arp scan times

Function

Run the **clear ip route arp scan times** command to clear the Address Resolution Protocol (ARP) request transmission count and start counting again.

Syntax

```
clear ip route arp scan times
```

Parameter Description

N/A

Command Modes

Privileged EXEC mode

Default Level

1

Usage Guidelines

If the configured transmission count of ARP requests is 10 but no ARP reply is received after the ARP request has been sent 10 times, the device no longer sends the ARP request. If you need to continue to send the ARP request, run this command to clear the count so that the device can continue to actively send the ARP request.

Examples

The following example clears the transmission count of ARP request.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route scan arp times 10
Hostname(config)# exit
Hostname# clear ip route arp scan times
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.2 ip default-gateway

Function

Run the **ip default-gateway** command to configure a default gateway.

Run the **no** form of this command to delete the default gateway.

Run the **default** form of this command to restore the default configuration.

No default gateway is configured by default.

Syntax

ip default-gateway *ipv4-address*

no ip default-gateway

default ip default-gateway

Parameter Description

ipv4-address: Default gateway IPv4 address.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

During data interaction, the packet with a destination address not in the local network segment is sent to the default gateway, and the gateway completes the next-step routing, achieving internetworking between the device and other networks.

Examples

The following example configures the default gateway as 192.168.1.1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip default-gateway 192.168.1.1
```

Notifications

N/A

Common Errors

N/A

Platform Description

This command is supported after the **no ip routing** command is used on devices.

Related Commands

- [show ip redirects](#)

1.3 ip default-network

Function

Run the **ip default-network** command to configure a default network.

Run the **no** form of this command to delete a default network.

Run the **default** form of this command to restore the default configuration.

The network ID is 0.0.0.0/0 by default.

Syntax

```
ip default-network network
```

```
no ip default-network network
```

```
default ip default-network network
```

Parameter Description

network: Network ID of the default network.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Configuring a default network aims to generate a default route. To generate a default route using the **default-network** command, make sure that the default network is not a directly-connected interface network, but is reachable in the routing table.

The default network always starts with an asterisk (*), indicating that it is a candidate for the default route. If there are direct routes and routes without next hop on the default network, the default route must be a static route.

Examples

The following example configures the default network as 192.168.100.0. Since a static route to the network is configured, the device will automatically generate a default route.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route 192.168.100.0 255.255.255.0 gigabitethernet 0/1
Hostname(config)# ip default-network 192.168.100.0
```

The following example configures the default network as 200.200.200.0. As long as 200.200.200.0 appears in the routing table, the route becomes a default route.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip default-network 200.200.200.0
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ip route** (IP Routing Basic)

1.4 ip fast-reroute static route-map

Function

Run the **ip fast-reroute static route-map** command to enable static fast reroute.

Run the **no** form of this command to disable static fast reroute.

Run the **default** form of this command to restore the default configuration.

The static fast reroute function is disabled by default.

Syntax

ip fast-reroute [**vrf** *vrf-name*] **static route-map** *route-map-name*

no ip fast-reroute [**vrf** *vrf-name*] **route-map**

default ip fast-reroute [**vrf** *vrf-name*] **route-map**

Parameter Description

vrf-name: Virtual routing and forwarding (VRF). If no VRF is specified, the command is executed on all VRFs.

route-map-name: Route map of static fast reroute.

static: Generates a backup route for the static route.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Fast reroute sends the primary link route and backup link route at the same time. When the primary link fails, packets can be directly switched to the backup link route for forwarding, reducing service interruption time. For static fast reroute, when the primary next hop fails, the backup next hop, if valid, becomes the primary next hop for forwarding.

To improve the switching performance of fast reroute, bidirectional forwarding detection (BFD) detection can be started for the next hop of primary link. If the interface is Up or Down, to shorten the forwarding interruption

time during fast reroute, you can configure **carrier-delay 0** in interface configuration mode of the primary link egress to achieve the fastest switching performance.

Examples

The following example enables static fast reroute, and sets the backup next hop of all static routes to 192.168.1.2 to forward packets through the Gigabit Ethernet 0/1 interface.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# route-map fast-reroute
Hostname(config-route-map)# set fast-reroute backup-nexthop GigabitEthernet 0/1
192.168.1.2
Hostname(config-route-map)# exit
Hostname(config)# ip fast-reroute static route-map fast-reroute
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.5 ip route

Function

Run the **ip route** command to configure static route.

Run the **no** form of this command to delete the configured static route.

Run the **no ip route all** command to delete all the configured static routes.

Run the **default ip route** command to restore the default configuration.

Run the **default ip route all** command to restore the default configuration.

No static route is configured by default.

Syntax

```
ip route [ vrf vrf-name ] network mask { ipv4-address [ global ] | interface [ ipv4-address [ arp | global ] * ] } [ distance | description description-text | [ disabled | enabled ] ] [ track object-number ] [ permanent ] | tag tag | weight number ] *
```

```
no ip route [ vrf vrf-name ] { all | network mask { ipv4-address | interface [ ipv4-address ] } [ distance ] }
```

```
default ip route [ vrf vrf-name ] { all | network mask { ipv4-address | interface [ ipv4-address ] } [ distance ] }
```

Parameter Description

vrf *vrf-name*: Specifies the route VRF, which can be a single-protocol IPv4 VRF or a multi-protocol VRF configured with an IPv4 address family. The VRF is a global VRF by default.

network: Address of the target network.

mask: Mask of the target network.

ipv4-address: Next hop address of the static route. You must specify at least one of *ipv4-address* and *interface*, or both. If *ipv4-address* is not specified, a static direct route is configured.

global: Indicates that the next hop belongs to a global VRF. By default, the VRF of the next hop is the same as the VRF specified by *vrf-name*.

interface: Next-hop egress of the static route. You must specify at least one of *ipv4-address* and *interface*, or both. If *interface* is not specified, a recursive static route is configured. The egress is obtained by the next hop from the routing table.

arp: Creates routes according to ARP entries.

distance: Management distance of the static route. The value range is from 1 to 255, and the default value is 1.

tag: Tag value of the static route. The value range is from 1 to 4294967295, and the default value is 0.

permanent: Indicates a permanent route. The static route is not a permanent route by default.

track *object-number*: Indicates correlation with track. *object-number* indicates the ID of the track object. By default, the static route is not correlated with the track function.

weight *number*: Specifies the weight of the static route. The value range is from 1 to 8, and the default value is 1.

description *description-text*: Specifies the static route description. By default, no description is configured. Here, *description-text* is a string of 1 to 60 characters.

disabled/enabled: Indicates the enable flag of the static route. The flag is **enabled** by default. **all**: Deletes all static routes under the specified VRF.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

In a small network, you can configure IPv4 static routes to implement internetworking.

The management distance of the static route is 1 by default. Setting the management distance allows the routes learned by a dynamic routing protocol to cover static routes. The static route is used only when dynamic routes cannot be learned. Setting the management distance of a static route can implement line backup. In this case, the static route is also called floating route. For example, the management distance of Open Shortest Path First (OSPF) routing protocol is 110, and the management distance of static route can be set to 125. In this way, when the line running OSPF fails, the data traffic can be switched to the line of static route.

The VRF to which the static route belongs can be specified. If it is not specified, the static route will be added to the default VRF. If the specified VRF is a multi-protocol VRF, it must be configured with an IPv4 address

family; otherwise, static route cannot be configured. Deleting the IPv4 address family of a multi-protocol VRF will also delete the IPv4 static route of this VRF.

The default weight of a static route is 1. You can run the **show ip route weight** command to display static routes with non-default weight. The weight parameter **weight** is used to implement the Weighted Cost Multipath (WCMP) function. When load-balancing routes can reach an address, the network device will allocate data traffic according to the weight value of each route. The route with a larger **weight** will share more data packets, and the route with a smaller **weight** will share less data packets. The WCMP limit of the device is 32 generally. When the weight sum of load balancing routes is greater than the limit, the routes beyond the limit will not take effect.

The configuration flag of a static route controls whether the static route is valid. If it is invalid, it will not be used for forwarding. The persistent route is configured to the forwarding table. It will always exist unless it is deleted by the network administrator.

When you want to configure a static route through an Ethernet interface, avoid directly setting the next hop to an interface (such as **ip route 0.0.0.0 0.0.0.0 GigabitEthernet 0/0**) if possible. If the next hop is directly an interface, the device deems that all the unknown target networks are directly connected to the Gigabit Ethernet 0/0 interface. Then, it sends an ARP request to every target host, thus occupying a lot of CPU and memory resources. Therefore, you are not advised to directly point a static route to an Ethernet interface.

Correlation of a static route with a track can be specified. When correlation of a static route with a specified track object is configured and the advertised status of the track object is inactive, the static route does not take effect. If the advertised status of the track object is active, the static route takes effect based on another status. With correlation of a static route with a track object, the third-party status concerned by the track object is mainly used to determine whether the static route takes effect. Correlation of a static route with a track object cannot be used for routes with the permanent attribute.

Correlation of a static route with an ARP object can be specified. When correlation of a static route with an ARP object is configured and the ARP object corresponding to the next hop and egress of the route does not exist, the static route does not take effect. When the ARP object corresponding to the next hop and egress of the route exists, the static route takes effect based on another status. Correlation of a static route with an ARP object cannot be used for routes with the permanent attribute.

Correlation of a static route with a track object cannot be used together with correlation of a static route with an ARP object.

Examples

The following example configures a static route. The next hop to 172.16.100.0/24 is 192.168.12.1, and the management distance is 115.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route 172.16.100.0 255.255.255.0 192.168.12.1 115
```

The following example configures a static route. The next hop to 172.16.100.0/24 is 192.168.2.1, and data traffic can be forwarded only from the Gigabit Ethernet 0/0 interface.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route 172.16.100.0 255.255.255.0 GigabitEthernet 0/1
192.168.12.1
```


Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ip route** (IP Routing Basic)

1.6 ip route scan arp interval

Function

Run the **ip route scan arp interval** command to set the interval for actively sending ARP requests when ARP fails after correlation of static routes with ARP is configured.

Run the **no** form of this command to delete the configured interval for actively sending ARP requests and restore it to the default value.

Run the **default** form of this command to restore the default configuration.

The correlation of static routes with ARP is disabled by default, and the ARP request is sent every 5s.

Syntax

ip route scan arp interval *request-interval*

no ip route scan arp interval

default ip route scan arp interval

Parameter Description

request-interval: Interval for actively sending ARP requests, in seconds. The range is from 5 to 120.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After the correlation of static routes with ARP is configured, when ARP fails due to a link failure or other causes, the device actively sends ARP requests. The transmission interval can be configured. By default, ARP requests are sent at an interval of 5s.

Examples

The following example configures correlation of static routes with ARP. When ARP fails, ARP requests are sent actively at an interval of 10s.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route scan arp interval 10
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.7 ip route scan arp times

Function

Run the **ip route scan arp times** command to set the times of actively sending ARP requests when ARP fails after correlation of static routes with ARP is configured.

Run the **no** form of this command to delete the configured times of actively sending ARP requests and restore it to the default value.

Run the **default** form of this command to restore the default configuration.

By default, the correlation of static routes with ARP is disabled, and the ARP request is sent 65,535 times.

Syntax

ip route scan arp times *request-times*

no ip route scan arp times

default ip route scan arp times

Parameter Description

request-times: Times of actively sending ARP requests when the ARP fails. The value range is from 1 to 65535.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After correlation of static routes with ARP is configured, when the ARP fails due to a link failure or other causes, the device actively sends ARP requests and the sending count can be configured. ARP requests are sent 65,535 times by default.

Examples

The following example configures correlation of static routes with ARP. When the ARP fails, the ARP request is actively sent 10 times.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip route scan arp times 10
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.8 ip route static bfd

Function

Run the **ip route static bfd** command to configure correlation of static routes with BFD.

Run the **no** form of this command to delete the configured correlation of static routes with BFD.

Run the **default** form of this command to restore the default configuration.

Correlation of static routes with BFD is disabled by default.

Syntax

```
ip route static bfd [ vrf vrf-name ] interface-type interface-number gateway [ source ipv4-address ]
no ip route static bfd [ vrf vrf-name ] interface-type interface-number gateway [ source ipv4-address ]
default ip route static bfd [ vrf vrf-name ] interface-type interface-number gateway [ source ipv4-address ]
```

Parameter Description

vrf *vrf-name*: Specifies the name of the VRF to which the static device belongs. The VRF is a global VRF by default.

interface-type interface-number: Interface type and interface number.

gateway: Gateway IP address, which is the neighbor IP address of BFD. If the next hop of the static route is this neighbor, BFD is used to check the connectivity of the forwarding path.

source *ipv4-address*: Specifies the source IP address used for the BFD session. If the neighbor IP address involves multiple hops, this parameter must be configured. By default, the source IP address is not specified.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can use this function to configure correlation of IPv4 static routes with BFD, quickly sensing change to the destination address link. If the Down status of the BFD session is detected, the IPv4 static route is not active and does not participate in packet forwarding. Before configuration, make sure that the BFD session parameters are configured on the interface.

Examples

The following example enables correlation of static routes with BFD and detects the forwarding path to the neighbor 172.16.0.2 via BFD.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# no switchport
Hostname(config-if-GigabitEthernet 0/1)# ip address 172.16.0.1 255.255.255.0
Hostname(config-if-GigabitEthernet 0/1)# bfd interval 50 min_rx 50 multiplier 3
Hostname(config-if-GigabitEthernet 0/1)# exit
Hostname(config)# ip route static bfd GigabitEthernet 0/1 172.16.0.2
Hostname(config)# ip route 10.0.0.0 255.0.0.0 GigabitEthernet 0/1 172.16.0.2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **bfd interval** (reliability/BFD)

1.9 ip route static inter-vrf

Function

Run the **ip route static inter-vrf** command to allow static routing across VRFs.

Run the **no** form of this command to disable static routing across VRFs.

Run the **default** form of this command to restore the default configuration.

Static routing across VRFs is allowed by default.

Syntax

ip route static inter-vrf

no ip route static inter-vrf

default ip route static inter-vrf**Parameter Description**

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

If you configure **no ip route static inter-vrf**, static routing across VRFs will not take effect. If active static routing across VRFs already exists and you configure it again, information similar to the following will be printed, instructing you to delete the static routing across VRFs.

```
*Aug 7 10:58:34: %NSM-ROUTESACROSSVRF: Un-installing route [x.x.x.x/8] from
global routing table with outgoing interface x/x.
```

Examples

The following example prohibits static routing across VRFs.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# no ip route static inter-vrf
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.10 ip static route-limit

Function

Run the **ip static route-limit** command to configure the maximum number of static routes.

Run the **no** form of this command to configure the default number of routes.

Run the **default** form of this command to restore the default configuration.

The configured maximum number of static routes is 1000 by default.

Syntax

```
ip static route-limit { number | default-vrf number | vrf vrf-name number }
```

```
no ip static route-limit [ default-vrf ] | [ vrf vrf-name ]
```

```
default ip static route-limit [ default-vrf ] | [ vrf vrf-name ]
```

Parameter Description

number: Maximum number of all the static routes of a device. The value range is from 1 to 1000000.

default-vrf *number*: Specifies the maximum number of static routes under the default VRF. The value range is from 1 to 10000.

vrf *vrf-name number*: Specifies the maximum number of static routes under the VRF. The value range is from 1 to 10000.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After the maximum number of static routes is configured using **ip static route-limit**, the number of static routes configured will not exceed the maximum number set. You can run the **show running-config** command to display the currently configured maximum number of non-default static routes.

Examples

The following example configures the maximum number of static routes as 9000, the maximum number of static routes of the default VRF as 2000, and the maximum number of static routes of VRF test as 1000.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip static route-limit 9000
Hostname(config)# ip static route-limit default-vrf 2000
Hostname(config)# ip static route-limit vrf test 1000
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.11 ipv6 default-gateway

Function

Run the **ipv6 default-gateway** command to configure a default gateway on a Layer-2 device.

Run the **no** form of this command to delete the default gateway.

Run the **default** form of this command to restore the default configuration.

No IPv6 default gateway is configured by default.

Syntax

ipv6 default-gateway *ipv6-address*

no ipv6 default-gateway

default ipv6 default-gateway

Parameter Description

ipv6-address: Default gateway IPv6 address.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

During data interaction, the packet with a destination address not in the local network segment is sent to the default gateway, and the gateway completes the next-step routing, achieving internetworking between the device and other networks. You can run the **show ipv6 redirects** command to display the default gateway configuration.

Examples

The following example configures the default IPv6 gateway as 10::1 on a Layer-2 device.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 default-gateway 10::1
```

Notifications

N/A

Common Errors

N/A

Platform Description

This command is supported after the **no ipv6 unicast-routing** command is used on devices.

Related Commands

- [show ipv6 redirects](#)

1.12 ipv6 fast-reroute static route-map

Function

Run the **ipv6 fast-reroute static route-map** command to enable static fast reroute.

Run the **no** form of this command to disable static fast reroute.

Run the **default** form of this command to restore the default configuration.

The static fast reroute function is disabled by default.

Syntax

```
ipv6 fast-reroute [ vrf vrf-name ] static route-map route-map-name
```

```
no ipv6 fast-reroute [ vrf vrf-name ]
```

```
default ipv6 fast-reroute [ vrf vrf-name ]
```

Parameter Description

vrf *vrf-name*: Specifies the VRF name. If the VRF name is not specified, the command is executed on all VRFs.

route-map-name: Route map of static fast reroute.

static: Generates a backup route for the static route.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Fast reroute sends the primary link route and backup link route at the same time. When the primary link fails, packets can be directly switched to the backup link route for forwarding, reducing service interruption time.

To improve the switching performance of fast reroute, BFD detection can be enabled for the next hop of primary link. If the interface is Up or Down, to shorten the forwarding interruption time during fast reroute, you can configure **carrier-delay 0** in interface configuration mode of the primary link egress to achieve the fastest switching performance.

For static fast reroute, when the primary next hop fails, the backup next hop, if valid, becomes the primary next hop for forwarding.

Examples

The following example enables static fast reroute, and sets the backup next hop of all static routes to 2001::1 to forward packets through the Gigabit Ethernet 0/1 interface.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# route-map fast-reroute
Hostname(config-route-map)# set ipv6 fast-reroute backup-interface
GigabitEthernet 0/1 backup-nexthop 2001::1
```



```

Hostname (config-route-map) # exit
Hostname (config) # ipv6 fast-reroute static route-map fast-reroute

```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.13 ipv6 route

Function

Run the **ipv6 route** command to configure IPv6 static route.

Run the **no** form of this command to delete the configured static route.

Run the **no ipv6 route all** command to delete all the configured static routes.

Run the **default ipv6 route** command to restore the default configuration.

Run the **default ipv6 route all** command to restore the default configuration.

The IPv6 static route function is disabled by default.

Syntax

```

ipv6 route [ vrf vrf-name ] ipv6-prefix / prefix-length { ipv6-address [ nexthop-vrf { vrf-name1 | default } ] |
interface [ ipv6-address [ nexthop-vrf { vrf-name1 | default } ] ] } [ distance ] [ tag tag ] [ weight number ] [
description description-text ]

```

```

no ipv6 route [ vrf vrf-name ] { all | ipv6-prefix/prefix-length { ipv6-address [ nexthop-vrf { vrf-name1 | default
} ] | interface [ ipv6-address [ nexthop-vrf { vrf-name1 | default } ] ] } [ distance ] }

```

```

default ipv6 route [ vrf vrf-name ] { all | ipv6-prefix/prefix-length { ipv6-address [ nexthop-vrf { vrf-name1 |
default } ] | interface [ ipv6-address [ nexthop-vrf { vrf-name1 | default } ] ] } [ distance ] }

```

Parameter Description

vrf *vrf-name*: Specifies the VRF to which the route belongs. This parameter must be a multi-protocol VRF with configured IPv6 address family. The VRF is a global VRF by default.

ipv6-prefix: IPv6 prefix, which must comply with the address representation format specified in RFC4291.

prefix-length: Length of the IPv6 prefix. A slash (/) must be added before the prefix.

ipv6-address: Next hop address of the static route. You must specify at least one of *ipv6-address* and *interface*, or both. If *ipv6-address* is not specified, a static direct route is configured.

interface: Next-hop egress of the static route. You must specify at least one of *ipv6-address* and *interface*, or both. If *interface* is not specified, a recursive static route is configured. The egress is obtained by the next hop from the routing table.

nexthop-vrf *vrf-name1*: Specifies the VRF to which the next hop belongs. This parameter must be a multi-protocol VRF with configured IPv6 address family. By default, the VRF of the next hop is the same as the VRF specified by the VRF name. Here, **nexthop-vrf default** indicates that the VRF of the next hop is a global VRF.

distance: Management distance of the static route. The management distance is 1 by default.

tag *tag*: Specifies the tag value of the static route. The value range is from 1 to 4294967295, and the default value is 0.

weight *number*: Specifies the weight of the static route, which must be specified when you configure equal-cost routes. When the weights of all equal-cost routes of a route are summed up, the sum cannot exceed the maximum number of equal-cost routes that can be configured for the route. Weighting of equal-cost routes of a route indicates the traffic ratio of these routes. The value range is from 1 to 8, and the default value is 1.

description *description-text*: Specifies the static route description. By default, no description is configured. Here, *description-text* is a string of 1 to 60 characters.

all: Deletes all static IPv6 routes under the specified VRF.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

On a simple network, you can configure IPv6 static routes to implement internetworking.

Deleting the IPv6 address family of a multi-protocol VRF will also delete the IPv6 static routes in the VRF table or next-hop routes. If the VRF of the interface of an IPv6 static route is inconsistent with the configured VRF of the next hop, this IPv6 static route will not take effect.

The default management distance of static routes is 1. Setting the management distance allows the route learned by the dynamic route to cover the static route. Only when the dynamic route cannot be learned, can the static route be used. Setting the management distance of a static route can implement line backup. In this case, the static route is also called floating route. For example, the management distance of OSPF routing protocol is 110, and the management distance of static route can be set to 125. In this way, when the line running OSPF fails, the data traffic can be switched to the line of static route.

Examples

The following example configures an IPv6 static route. The target network of the traffic is 2001::/64, the next hop is 2002::2, and the management distance is 115.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 route 2001::/64 2002::2 115
```

The following example configures an IPv6 static route. The target network of the traffic is 2001::/64, the next hop is 2002::2, and data traffic can be forwarded only from the GigabitEthernet 0/1 interface.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 route 2001::/64 GigabitEthernet 0/1 2002::2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ipv6 route** (IP Routing Basic)

1.14 ipv6 route static bfd

Function

Run the **ipv6 route static bfd** command to configure correlation of static routes with BFD.

Run the **no** form of this command to delete the configured correlation of static routes with BFD.

Run the **default** form of this command to restore the default configuration.

Correlation of static routes with BFD is disabled by default.

Syntax

ipv6 route static bfd [**vrf** *vrf-name*] *interface-type interface-number gateway* [**source** *ipv6-address*]

no ipv6 route static bfd [**vrf** *vrf-name*] *interface-type interface-number gateway* [**source** *ipv6-address*]

default ipv6 route static bfd [**vrf** *vrf-name*] *interface-type interface-number gateway* [**source** *ipv6-address*]

Parameter Description

vrf *vrf-name*: Specifies the name of the VRF to which the static device belongs. If VRF is not specified, the command is executed on all VRFs.

interface-type interface-number: Interface type and interface number.

gateway: Gateway IP address, which is the neighbor IP address of BFD. If the next hop of the static route is this neighbor, BFD is used to check the connectivity of the forwarding path.

source *ipv6-address*: Specifies the source IP address used for the BFD session. If the neighbor IP address involves multiple hops, this parameter must be configured. By default, the neighbor IP address of the BFD session is a single hop, and the source IP address is not used.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can use this function to configure correlation of IPv6 static routes with BFD, quickly sensing change to the destination address link. If the Down status of the BFD session is detected, the IPv6 static route is not active and does not participate in packet forwarding. Before configuration, make sure that the BFD session parameters are configured on the interface.

Examples

The following example enables correlation of static routes with BFD and detects the forwarding path to the neighbor 2001:1::2 via BFD.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if)# no switchport
Hostname(config-if)# ip address 2001:1::1/64
Hostname(config-if)# bfd interval 50 min_rx 50 multiplier 3
Hostname(config-if)#exit
Hostname(config)# ipv6 route static bfd GigabitEthernet 0/1 2001:1::2
Hostname(config)# ipv6 route 2002::/64 GigabitEthernet 0/1 2001:1::2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.15 ipv6 static route-limit

Function

Run the **ipv6 static route-limit** command to configure the maximum number of static routes.

Run the **no** form of this command to configure the default number of routes.

Run the **default** form of this command to restore the default configuration.

The maximum number of static routes is 1000 by default.

Syntax

```
ipv6 static route-limit { number | default-vrf number | vrf vrf-name number }
```

```
no ipv6 static route-limit [ default-vrf ] | [ vrf vrf-name ]
```

```
default ipv6 static route-limit [ default-vrf ] | [ vrf vrf-name ]
```

Parameter Description

number: Maximum number of all the static routes of a device. The value range is from 1 to 1000000.

default-vrf *number*: Specifies the maximum number of static routes under the default VRF. The value range is from 1 to 10000.

vrf *vrf-name number*: Specifies the maximum number of static routes under the VRF. The value range is from 1 to 10000.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After the maximum number of static routes is configured using **ipv6 static route-limit**, the number of static routes configured will not exceed the maximum number set. You can run the **show running config** command to display the currently configured maximum number of non-default static routes.

Examples

The following example configures the maximum number of static routes in global IPv6 mode as 900, the maximum number of static routes of the default VRF as 200, and the maximum number of static routes of VRF test as 100.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 static route-limit 900
Hostname(config)# ipv6 static route-limit default-vrf 200
Hostname(config)# ipv6 static route-limit vrf test 100
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.16 maximum routes

Function

Run the **maximum routes** command to limit the maximum number of routes in the default VRF.

Run the **no** form of this command to cancel limitation to the maximum number of routes in the default VRF.

The maximum number of routes in the default VRF is not limited by default.

Syntax

```
maximum routes limit { warn-threshold | warning-only }
```

```
no maximum routes
```

Parameter Description

limit: Maximum number of routes. The routes beyond the limit are not written to the core routing table. The value range is from 1 to 4294967295.

warn-threshold: Threshold for printing warning. Warning will be printed when this percentage is reached. The value range is from 1 to 100.

warning-only: Only prints warning and still allows routes to be added to the core routing table when the configured maximum number is reached.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to limit the number of routes running in the default VRF. If you want warning only, use the **warning-only** parameter.

Examples

The following example configures the maximum number of routes under the default VRF as 1000. When the number of routes exceeds 1000*100%, the warning log will be given.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# maximum routes 1000 100
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ip route** (IP Routing Basic)

1.17 show ip redirects

Function

Run the **show ip redirects** command to display the default gateway.

Syntax

```
show ip redirects
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display the gateway configuration of a device. This command can be used after the **no ip routing** command is used on devices.

Examples

The following example displays the default gateway.

```
Hostname> enable
Hostname# show ip redirects
Default Gateway: 192.168.195.1
```

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

Field	Description
Default Gateway	Indicates the IP address of the default gateway.

Notifications

N/A

Platform Description

This command is supported after the **no ip routing** command is used on devices.

1.18 show ipv6 redirects

Function

Run the **show ipv6 redirects** command to display the IPv6 default gateway.

Syntax

```
show ipv6 redirects
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display the gateway configuration of a device. This command can be used after the **no ipv6 unicast-routing** command is used on devices.

Examples

The following example displays the IPv6 default gateway.

```
Hostname> enable
Hostname# show ipv6 redirects
Default Gateway: 10::1
```

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

Field	Description
Default Gateway	Indicates the IPv6 address of the default gateway.

Notifications

N/A

Platform Description

This command is supported after the **no ipv6 unicast-routing** command is used on devices.