Contents

RIP commands

checkzero

Use **checkzero** to enable zero field check on RIPv1 messages.

Use **undo checkzero** to disable zero field check.

Syntax

checkzero

undo checkzero

Default

The zero field check function is enabled.

Views

RIP view

Predefined user roles

network-admin

Usage guidelines

When the zero field check is enabled, the router discards RIPv1 messages in which zero fields contain non-zero values. If all messages are trustworthy, disable this feature to reduce the workload of the CPU.

Examples

Disable zero field check on RIPv1 messages for RIP process 1.

```
<Sysname> system-view
[Sysname] rip
[Sysname-rip-1] undo checkzero
```

default cost

Use **default cost** to configure a default metric for redistributed routes.

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

Syntax

default cost *cost-value*

undo default cost

Default

The default metric of redistributed routes is 0.

Views

RIP view

Predefined user roles

network-admin

Parameters

cost-value: Specifies a default metric for redistributed routes, in the range of 0 to 16.

Usage guidelines

When you use the **import-route** command to redistribute routes from another routing protocol without specifying a metric, the metric specified by the **default cost** command applies.

Examples

Configure a default metric of 3 for redistributed routes.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] default cost 3
```

Related commands

import-route

default-route

Use **default-route** to configure all interfaces running a RIP process to advertise a default route with a specified metric to RIP neighbors.

Use **undo default-route** to restore the default.

Syntax

default-route { **only** | **originate** } [**cost** *cost-value* | **route-policy** *route-policy-name*] *

undo default-route

Default

No default route is sent to RIP neighbors.

Views

RIP view

Predefined user roles

network-admin

Parameters

only: Advertises only a default route.

originate: Advertises both a default route and other routes.

cost-value: Specifies a cost for the default route, in the range of 1 to 15. The default is 1.

route-policy *route-policy-name*: Specifies a routing policy by its name, a case sensitive string of 1 to 63 characters. If you specify this option, the command advertises a default route only when a route in the routing table matches the routing policy.

Usage guidelines

A RIP router configured with this feature does not receive any default route from RIP neighbors.

Examples

Configure all interfaces running RIP process 100 to send only a default route with a metric of 2 to RIP neighbors.

```
<Sysname> system-view
[Sysname] rip 100
[Sysname-rip-100] default-route only cost 2
```

Related commands

rip default-route

display rip

Use **display rip** to display state and configuration information for a RIP process.

Syntax

display rip [*process-id*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535. If no process is specified, the command displays state and configuration information for all RIP processes.

Examples

Display current state and configuration information for all RIP processes.

```
<Sysname> display rip
  Public VPN-instance name:
    RIP process: 1
       RIP version: 1
       Preference: 100
           Routing policy: abc
       Fast-reroute:
           Routing policy: frr
       Checkzero: Enabled
       Default cost: 0
       Summary: Enabled
       Host routes: Enabled
       Maximum number of load balanced routes: 8
       Update time   :   30 secs  Timeout time         :  180 secs
       Suppress time :  120 secs  Garbage-collect time :  120 secs
       Update output delay:   20(ms)  Output count:    3
       Graceful-restart interval:   60 secs
       Triggered Interval : 5 50 200
       Silent interfaces: None
       Default routes: Originate  Default routes cost: 3
       Verify-source: Enabled
       Networks:
           1.0.0.0
       Configured peers:
           197.168.6.2
       Triggered updates sent: 0
       Number of routes changes: 1
       Number of replies to queries: 0
```

Table 1 Command output

Field	Description
Public VPN-instance name	The RIP process runs on the public network.
Private VPN-instance name	VPN instance where the RIP process runs.
RIP process	RIP process ID.
RIP version	RIP version 1 or 2.
Preference	RIP preference.
Fast-reroute	RIP FRR.
Checkzero	Indicates whether the zero field check is enabled for RIPv1 messages: **Enabled** or **Disabled**.
Default cost	Default cost of redistributed routes.
Summary	Indicates whether route summarization is enabled: **Enabled** or **Disabled**.
Host routes	Indicates whether to receive host routes: **Enabled** or **Disabled**.
Update time	RIP update interval, in seconds.
Timeout time	RIP timeout time, in seconds.
Suppress time	RIP suppress interval, in seconds.
Garbage-collect time	RIP garbage-collect interval, in seconds.
Update output delay	RIP packet sending interval, in seconds.
Output count	Maximum number of RIP packets sent at each interval.
Graceful-restart interval	GR interval, in seconds.
Triggered Interval	Triggered update sending interval.
Silent interfaces	Silent interfaces, which do not periodically send updates.
Default routes	Indicates whether a default route is sent to RIP neighbors. • **only**—Only a default route is advertised. • **originate**—A default route is advertised along with other routes. • **disable**—No default route is advertised.
Default routes cost	Metric for a default route.
Verify-source	Indicates whether the source IP address is checked for received RIP routing updates: **Enabled** or **Disabled**.
Networks	Networks enabled with RIP.
Configured peers	Configured neighbors.
Triggered updates sent	Number of triggered updates sent.
Number of routes changes	Number of route changes.
Number of replies to queries	Number of RIP responses.

display rip database

Use **display rip database** to display active routes for a RIP process.

Syntax

display rip *process-id* **database** [*ip-address* { *mask-length* | *mask* }]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

ip-address { *mask-length* | *mask* }: Displays active routes for the specified IP address. If you do not specify this argument, the command displays all actives routes for a RIP process.

Examples

Display active routes for RIP process 100.

```
<Sysname> display rip 100 database
   1.0.0.0/8, auto-summary
       1.1.1.0/24, cost 16, interface summary
       1.1.1.0/24, cost 0, nexthop 1.1.1.1, RIP-interface
       1.1.2.0/24, cost 0, imported
   2.0.0.0/8, auto-summary
   2.0.0.0/8, cost 1, nexthop 1.1.1.2
```

Display active routes with destination IP address 1.1.1.0 and mask length 24 for RIP process 100.

```
<Sysname> display rip 100 database 1.1.1.0 24
   1.1.1.0/24, cost 16, interface summary
   1.1.1.0/24, cost 0, nexthop 1.1.1.1, RIP-interface
```

Table 2 Command output

Field	Description
cost	Cost of the route.
auto-summary	Indicates that the route is a RIP automatic summary route.
interface summary	Indicates that the route is a RIP interface summary route.
nexthop	Address of the next hop.
RIP-interface	Direct route on a RIP-enabled interface.
imported	Indicates that the route is redistributed from another routing protocol.

display rip graceful-restart

Use **display rip graceful-restart** to display the GR status for a RIP process.

Syntax

display rip [*process-id*] **graceful-restart**

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535. If you do not specify this argument, the command displays the GR status for all RIP processes.

Examples

Display the GR status for RIP process 1.

```
<Sysname> display rip 1 graceful-restart
 RIP process: 1
 Graceful Restart capability     : Enabled
 Current GR state                : Normal
 Graceful Restart period         : 60  seconds
 Graceful Restart remaining time : 0   seconds
```

Table 3 Command output

Field	Description
Graceful Restart capability	Indicates whether GR is enabled: **Enabled** or **Disabled**.
Current GR state	GR state: • **Under GR**—GR is in progress. • **Normal**—No GR is in progress or GR has completed.
Graceful Restart period	GR interval.

display rip interface

Use **display rip interface** to display RIP interface information for a RIP process.

Syntax

display rip *process-id* **interface** [*interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

interface-type interface-number: Specifies an interface by its type and number. If no interface is specified, the command displays information about all RIP interfaces for the RIP process.

Examples

Display information about all interfaces for RIP process 1.

```
<Sysname> display rip 1 interface
```

```
Interface: Vlan-interface10
   Address/Mask: 1.1.1.1/24          Version: RIPv1
   MetricIn: 0                       MetricIn route policy: Not designated
   MetricOut: 1                      MetricOut route policy: Not designated
   Split-horizon/Poison-reverse: On/Off  Input/Output: On/On
   Default route: Off
   Update output delay:  20(ms)      Output count: 3
   Current number of packets/Maximum number of packets: 0/2000
```

Table 4 Command output

Field	Description
Interface	Name of an interface running RIP.
Address/Mask	IP address and mask of the interface.
Version	RIP version running on the interface.
MetricIn	Additional metric added to incoming routes.
MetricIn route policy	Name of the routing policy used to add an additional metric for incoming routes. If no routing policy is used, the field displays **Not designated**.
MetricOut	Additional metric added to outgoing routes.
MetricOut route policy	Name of the routing policy used to add an additional routing metric for outgoing routes. If no routing policy is used, the field displays **Not designated**.
Split-horizon	Indicates whether split horizon is enabled: • **on**—Enabled. • **off**—Disabled.
Poison-reverse	Indicates whether poison reverse is enabled: • **on**—Enabled. • **off**—Disabled.
Input/Output	Indicates whether the interface is enabled to receive and send RIP messages: • **on**—Enabled. • **off**—Disabled.
Default route	Indicates whether to send a default route to RIP neighbors: • **Only**—Advertises only a default route. • **Originate**—Advertises both a default route and other routes. • **No-originate**—Advertises only non-default routes. • **Off**—Advertises no default route.
Default route cost	Metric for a default route.
Update output delay	RIP packet sending interval.
Output count	Maximum number of RIP packets that can be sent at each interval.
Current number of packets /Maximum number of packets	Number of RIP packets to be sent/maximum number of RIP packets that can be sent within a certain interval.

display rip neighbor

Use **display rip neighbor** to display neighbor information for a RIP process.

Syntax

display rip *process-id* **neighbor** [*interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

interface-type interface-number: Specifies an interface by its type and number. If you do not specify this argument, the command displays all neighbor information for the RIP process.

Examples

Display neighbor information for RIP process 1.

```
<Sysname> display rip 1 neighbor
 Neighbor address: 197.168.2.3
     Interface  : Vlan-interface10
     Version    : RIPv2     Last update: 00h00m02s
     Relay nbr  : N/A       BFD session: N/A
     Bad packets: 0         Bad routes : 0
```

Table 5 Command output

Field	Description
Interface	Output interface that is connected to the neighbor.
Version	Version of RIP that the neighbor runs.
Last update	Time elapsed since the most recent update.
Relay nbr	Relay neighbor type.
BFD session	BFD session type.
Bad packets	Number of received bad packets.
Bad routes	Number of received bad routes.

display rip non-stop-routing

Use **display rip non-stop-routing** to display the NSR status for a RIP process.

Syntax

display rip [*process-id*] **non-stop-routing**

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535. If you do not specify this argument, the command displays the NSR status for all RIP processes.

Examples

Display the NSR status for RIP process 1.

```
<Sysname> display rip 1 non-stop-routing
RIP process: 1
 Nonstop Routing capability: Enabled
 Current NSR state         : Finish
```

Table 6 Command output

Field	Description
Nonstop Routing capability	Indicates whether NSR is enabled: **Enabled** or **Disabled**.
Current NSR state	NSR state: • Initialization. • **Smooth**—Upgrading data. • **Advertising**—Advertising routes. • **Redistribution**—Redistributing routes. • Finish.

display rip route

Use **display rip route** to display routing information for a RIP process.

Syntax

display rip *process-id* **route** [*ip-address* { *mask-length* | *mask* } [**verbose**] | **peer** *ip-address* | **statistics**]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

ip-address { *mask-length* | *mask* }: Displays route information for the specified IP address.

verbose: Displays all routing information for the specified destination IP address. If you do not specify this keyword, the command displays only information about optimal routes with the specified destination IP address.

peer *ip-address*: Displays route information learned from the specified neighbor.

statistics: Displays route statistics, including the total number of routes and number of routes from each neighbor.

Usage guidelines

If no optional parameters are specified, the **display rip** *process-id* **route** command displays all routing information for a RIP process.

Examples

Display all routing information for RIP process 1.

```
<Sysname> display rip 1 route
 Route Flags: R - RIP, T - TRIP
              P - Permanent, A - Aging, S - Suppressed, G - Garbage-collect
              D - Direct, O - Optimal, F - Flush to RIB
------------------------------------------------------------------------------
 Peer 1.1.1.1 on Vlan-interface10
      Destination/Mask        Nexthop          Cost    Tag     Flags   Sec
      3.0.0.0/8               1.1.1.1          1       0       RAOF    24
 Local route
      Destination/Mask        Nexthop          Cost    Tag     Flags   Sec
      4.4.4.4/32              0.0.0.0          0       0       RDOF    -
      1.1.1.0/24              0.0.0.0          0       0       RDOF    -
```

Display specified routing information for RIP process 1.

```
<Sysname> display rip 1 route 3.0.0.0 8 verbose
 Route Flags: R - RIP, T - TRIP
              P - Permanent, A - Aging, S - Suppressed, G - Garbage-collect
              D - Direct, O - Optimal, F - Flush to RIB
------------------------------------------------------------------------------
 Peer 1.1.1.1 on Vlan-interface10
  Destination/Mask    OrigNexthop/RealNexthop          Cost  Tag   Flags Sec
  3.0.0.0/8           1.1.1.1/1.1.1.1                  1     0     RAOF  16
```

Table 7 Command output

Field	Description
Route Flags	• **R**—RIP route. • **P**—The route never ages out. • **A**—The route is aging. • **S**—The route is suppressed. • **G**—The route is in Garbage-collect state. • **D**—The route is a direct route. • **O**—The route is an optimal route. • **F**—The route has been flushed to the RIB.
Peer *X.X.X.X* on *interface-type interface-number*	Routing information learned from a neighbor on a RIP interface.
Local route	Locally generated direct routes.
Destination/Mask	Destination IP address and subnet mask.
Nexthop	Next hop of the route.
OrigNexthop/RealNexthop	If the route is from a directly connected neighbor, the original next hop is the real next hop. If the route is from an indirectly connected neighbor, the **RealNexthop** field displays the recursive next hop for the route. Otherwise, the field is blank.
Cost	Cost of the route.
Tag	Route tag.
Flags	Route state.

Field	Description
Sec	Remaining time of the timer corresponding to the route state.

Display routing statistics for RIP process 1.

```
<Sysname> display rip 1 route statistics
 Peer                 Optimal/Aging       Optimal/Permanent       Garbage
 1.1.1.1              1/1                 0/0                     0
 Local                2/0                 0/0                     0
 Total                3/1                 0/0                     0
```

Table 8 Command output

Field	Description
Peer	IP address of a neighbor.
Optimal	Total number of optimal routes.
Aging	Total number of aging routes.
Permanent	Total number of routes that never age out.
Garbage	Total number of routes in the Garbage-collection state.
Local	Total number of locally generated direct routes.
Total	Total number of routes learned from all RIP neighbors.

dscp

Use **dscp** to set the DSCP value for outgoing RIP packets.

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

Syntax

dscp *dscp-value*

undo dscp

Default

The DSCP value for outgoing RIP packets is 48.

Views

RIP view

Predefined user roles

network-admin

Parameters

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

Examples

Set the DSCP value for outgoing RIP packets to 63 in RIP process 1.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] dscp 63
```

fast-reroute

Use **fast-reroute** to configure RIP FRR.

Use **undo fast-reroute** to disable RIP FRR.

Syntax

fast-reroute route-policy *route-policy-name*

undo fast-reroute

Default

RIP FRR is disabled.

Views

RIP view

Predefined user roles

network-admin

Parameters

route-policy *route-policy-name*: Specifies a routing policy by its name, a case sensitive string of 1 to 63 characters. If you specify this option, the command designates a backup next hop for the routes that match the routing policy.

Usage guidelines

RIP FRR is available only when the state of primary link (with Layer 3 interfaces staying up) changes from bidirectional to unidirectional or down. A unidirectional link refers to the link through which packets are forwarded only from one end to the other.

RIP FRR is only effective for RIP routes that are learned from directly connected neighbors.

Equal-cost routes do not support RIP FRR.

Examples

Enable RIP FRR and use routing policy **frr** to specify a backup next hop.

```
<Sysname> system-view
[Sysname] ip prefix-list abc index 10 permit 100.1.1.0 24
[Sysname] route-policy frr permit node 10
[Sysname-route-policy-frr-10] if-match ip address prefix-list abc
[Sysname-route-policy-frr-10] apply fast-reroute backup-interface vlan-interface 1
backup-nexthop 193.1.1.8
[Sysname-route-policy-frr-10] quit
[Sysname] rip 100
[Sysname-rip-100] fast-reroute route-policy frr
```

filter-policy export

Use **filter-policy export** to configure RIP to filter redistributed routes.

Use **undo filter-policy export** to remove the filtering.

Syntax

filter-policy { *ipv4-acl-number* | **prefix-list** *prefix-list-name* } **export** [*protocol* [*process-id*] | *interface-type interface-number*]

undo filter-policy export [*protocol* [*process-id*] | *interface-type interface-number*]

Default

RIP does not filter redistributed routes.

Views

RIP view

Predefined user roles

network-admin

Parameters

ipv4-acl-number: Specifies an IPv4 ACL by its number in the range of 2000 to 3999 to filter redistributed routes.

prefix-list *prefix-list-name*: Specifies an IP prefix list by its name, a case-sensitive string of 1 to 63 characters, to filter redistributed routes.

protocol: Filters routes redistributed from the specified routing protocol.

process-id: Specifies the process ID of the specified routing protocol, in the range of 1 to 65535. Specify a process ID when the routing protocol is **rip**, **ospf**, or **isis**. If no process ID is specified, the default process ID is 1.

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

Usage guidelines

You can configure only one filtering policy to filter routes redistributed from a routing protocol or an interface. Without any protocol or interface specified, the filtering policy applies globally. If you execute this command multiple times, the most recent configuration takes effect.

To remove the filtering policy configured for a protocol or an interface, use the **undo filter-policy export** command with the protocol or interface specified.

To reference an advanced ACL (with a number from 3000 to 3999) in the command, configure the ACL using one of the following methods:

- To deny/permit a route with the specified destination, use the **rule** [*rule-id*] { **deny** | **permit** } **ip source** *sour-addr sour-wildcard* command.
- To deny/permit a route with the specified destination and mask, use the **rule** [*rule-id*] { **deny** | **permit** } **ip source** *sour-addr sour-wildcard* **destination** *dest-addr dest-wildcard* command.

The **source** keyword specifies the destination address of a route and the **destination** keyword specifies the subnet mask of the route. For the mask configuration to take effect, specify a contiguous subnet mask.

Examples

Use basic ACL 2000 to filter redistributed routes.

```
<Sysname> system-view
[Sysname] acl basic 2000
[Sysname-acl-ipv4-basic-2000] rule deny source 192.168.10.0 0.0.0.255
[Sysname-acl-ipv4-basic-2000] quit
[Sysname] rip 1
[Sysname-rip-1] filter-policy 2000 export
```

Use IP prefix list **abc** to filter redistributed routes.

```
<Sysname> system-view
[Sysname] ip prefix-list abc index 10 permit 11.0.0.0 8
[Sysname] rip 1
[Sysname-rip-1] filter-policy prefix-list abc export
```

Configure advanced ACL 3000 to permit only route 113.0.0.0/16 to pass. Use ACL 3000 to filter redistributed routes.

```
<Sysname> system-view
[Sysname] acl advanced 3000
[Sysname-acl-ipv4-adv-3000] rule 10 permit ip source 113.0.0.0 0 destination 255.255.0.0
0
[Sysname-acl-ipv4-adv-3000] rule 100 deny ip
[Sysname-acl-ipv4-adv-3000] quit
[Sysname] rip 1
[Sysname-rip-1] filter-policy 3000 export
```

Related commands

acl (*ACL and QoS Command Reference*)

import-route

ip prefix-list

filter-policy import

Use **filter-policy import** to configure RIP to filter received routes.

Use **undo filter-policy import** to remove the filtering.

Syntax

filter-policy { *ipv4-acl-number* | **gateway** *prefix-list-name* | **prefix-list** *prefix-list-name* [**gateway** *prefix-list-name*] } **import** [*interface-type interface-number*]

undo filter-policy import [*interface-type interface-number*]

Default

RIP does not filter received routes.

Views

RIP view

Predefined user roles

network-admin

Parameters

ipv4-acl-number: Specifies an IPv4 ACL by its number in the range of 2000 to 3999 to filter received routes.

prefix-list *prefix-list-name*: Specifies an IP prefix list by its name, a case-sensitive string of 1 to 63 characters, to filter received routes.

gateway *prefix-list-name*: Specifies an IP prefix list by its name, a case-sensitive string of 1 to 63 characters, to filter routes based on their next hops.

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

Usage guidelines

You can configure only one filtering policy to filter routes received on an interface. Without any interface specified, the filtering policy applies globally. If you execute this command multiple times, the most recent configuration takes effect.

To remove the filtering policy configured for an interface, use the **undo filter-policy import** command with the interface specified.

To reference an advanced ACL (with a number from 3000 to 3999) in the command, configure the ACL using one of the following methods:

- To deny/permit a route with the specified destination, use the **rule** [*rule-id*] { **deny** | **permit** } **ip source** *sour-addr sour-wildcard* command
- To deny/permit a route with the specified destination and mask, use the **rule** [*rule-id*] { **deny** | **permit** } **ip source** *sour-addr sour-wildcard* **destination** *dest-addr dest-wildcard* command.

The **source** keyword specifies the destination address of a route and the **destination** keyword specifies the subnet mask of the route. For the mask configuration to take effect, specify a contiguous subnet mask.

Examples

Use basic ACL 2000 to filter received RIP routes.

```
<Sysname> system-view
[Sysname] acl basic 2000
[Sysname-acl-ipv4-basic-2000] rule deny source 192.168.10.0 0.0.0.255
[Sysname-acl-ipv4-basic-2000] quit
[Sysname] rip 1
[Sysname-rip-1] filter-policy 2000 import
```

Use IP prefix list **abc** to filter received RIP routes.

```
<Sysname> system-view
[Sysname] ip prefix-list abc index 10 permit 11.0.0.0 8
[Sysname] rip 1
[Sysname-rip-1] filter-policy prefix-list abc import
```

Configure advanced ACL 3000 to permit only route 113.0.0.0/16 to pass. Use ACL 3000 to filter received routes.

```
<Sysname> system-view
[Sysname] acl advanced 3000
[Sysname-acl-ipv4-adv-3000] rule 10 permit ip source 113.0.0.0 0 destination 255.255.0.0
0
[Sysname-acl-ipv4-adv-3000] rule 100 deny ip
[Sysname-acl-ipv4-adv-3000] quit
[Sysname] rip 1
[Sysname-rip-1] filter-policy 3000 import
```

Related commands

acl (*ACL and QoS Command Reference*)

ip prefix-list

graceful-restart

Use **graceful-restart** to enable RIP GR.

Use **undo graceful-restart** to disable RIP GR.

Syntax

graceful-restart

undo graceful-restart

Default

RIP GR is disabled.

Views

RIP view

Predefined user roles

network-admin

Usage guidelines

The **graceful-restart** command and the **non-stop-routing** command are mutually exclusive.

Examples

Enable GR for RIP process 1.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] graceful-restart
```

graceful-restart interval

Use **graceful-restart interval** to set the GR interval.

Use **undo graceful-restart interval** to restore the default.

Syntax

graceful-restart interval *interval*

undo graceful-restart interval

Default

The GR interval is 60 seconds.

Views

RIP view

Predefined user roles

network-admin

Parameters

interval: Specifies the GR interval in the range of 5 to 360 seconds.

Examples

Set the GR interval to 200 seconds for RIP process 1.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] graceful-restart interval 200
```

host-route

Use **host-route** to enable host route reception.

Use **undo host-route** to disable host route reception.

Syntax

host-route

undo host-route

Default

RIP receives host routes.

Views

RIP view

Predefined user roles

network-admin

Usage guidelines

A router might receive many host routes from the same subnet. These routes are not helpful for routing and occupy a large number of resources. To solve this problem, use the **undo host-route** command to disable RIP from receiving host routes.

This command takes effect only for RIPv2 routes.

Examples

Disable RIP from receiving host routes.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] undo host-route
```

import-route

Use **import-route** to enable route redistribution from another routing protocol.

Use **undo import-route** to remove routes redistributed from another routing protocol.

Syntax

import-route *protocol* [*as-number*] [*process-id* | **all-processes** | **allow-ibgp**] [**allow-direct** | **cost** *cost-value* | **route-policy** *route-policy-name* | **tag** *tag*] *

undo import-route *protocol* [*process-id* | **all-processes**]

Default

RIP does not redistribute routes from any other routing protocol.

Views

RIP view

Predefined user roles

network-admin

Parameters

protocol: Specifies a routing protocol from which RIP redistributes routes.

as-number: Specifies an AS by its number in the range of 1 to 4294967295. This argument applies only to the BGP protocol. If you do not specify the *as-number* argument, this command redistributes all IPv4 EBGP routes. As a best practice, specify the AS number to avoid redistributing excessive IPv4 EBGP routes.

process-id: Specifies a process by its ID in the range of 1 to 65535. The default is 1. This argument is available only when the protocol is **isis**, **ospf**, or **rip**.

all-processes: Enables route redistribution from all the processes of the specified protocol. This keyword takes effect only when the protocol is **rip**, **ospf**, or **isis**.

allow-ibgp: Allows redistribution of IBGP routes. This keyword is available when the *protocol* argument is set to **bgp**.

allow-direct: Redistributes the networks of the local interfaces enabled with the specified routing protocol. By default, the networks of the local interfaces are not redistributed. If you specify both the **allow-direct** keyword and the **route-policy** *route-policy-name* option, make sure the **if-match** rule defined in the routing policy does not conflict with the **allow-direct** keyword. For example, if you specify the **allow-direct** keyword, do not configure the **if-match route-type** rule for the routing policy. Otherwise, the **allow-direct** keyword does not take effect.

cost *cost-value*: Specifies a cost for redistributed routes, in the range of 0 to 16. The default cost is 0.

route-policy *route-policy-name*: Specifies a routing policy by its name, a case-sensitive string of 1 to 63 characters.

tag *tag*: Specifies a tag for marking redistributed routes, in the range of 0 to 65535. The default is 0.

Usage guidelines

This command redistributes only active routes. To view route state information, use the **display ip routing-table protocol** command.

The **import-route bgp** command redistributes only EBGP routes. The **import-route** *bgp* **allow-ibgp** command additionally redistributes IBGP routes and might cause routing loops. Therefore, use it with caution.

The **undo import-route** *protocol* **all-processes** command removes only the configuration made by the **import-route** *protocol* **all-processes** command. It does not remove the configuration made by the **import-route** *protocol process-id* command.

Examples

Redistribute static routes into RIP, and set the cost for redistributed routes to 4.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] import-route static cost 4
```

Related commands

default cost

maximum load-balancing

Use **maximum load-balancing** to set the maximum number of RIP equal-cost multi-path (ECMP) routes for load balancing.

Use **undo maximum load-balancing** to restore the default.

Syntax

maximum load-balancing *number*

undo maximum load-balancing

Default

The maximum number of RIP ECMP routes equals the maximum number of ECMP routes, which is configurable by using the **max-ecmp-num** command.

Views

RIP view

Predefined user roles

network-admin

Parameters

number: Specifies the maximum number of RIP ECMP routes. Load balancing is not implemented when the value is 1.

Usage guidelines

You can set a smaller value for the **max-ecmp-num** command than the current value for the **maximum load-balancing** command. After a reboot, the value for the **maximum load-balancing** command automatically changes to be the same as the value for the **max-ecmp-num** command.

Examples

Set the maximum number of RIP ECMP routes to 2.

```
<Sysname> system-view
[Sysname] rip
[Sysname-rip-1] maximum load-balancing 2
```

Related commands

max-ecmp-num

network

Use **network** to enable RIP on an interface attached to a specified network.

Use **undo network** to disable RIP on an interface attached to a specified network.

Syntax

network *network-address* [*wildcard-mask*]

undo network *network-address*

Default

RIP is disabled on an interface.

Views

RIP view

Predefined user roles

network-admin

Parameters

network-address: Specifies a subnet address where an interface resides.

wildcard-mask: Specifies an IP address wildcard mask. A wildcard mask can be thought of as a subnet mask, with 1s and 0s inverted. For example, a wildcard mask of 255.255.255.0 corresponds to a subnet mask of 0.0.0.255. If you do not specify this argument, the command uses the natural mask.

Usage guidelines

RIP runs only on an interface attached to the specified network, which can be configured with a wildcard mask. An interface not on the specified network does not receive or send RIP routes, or advertise its direct routes.

For a single RIP process, the **network** 0.0.0.0 command can enable RIP on all interfaces. If multiple RIP processes exist, the command is not applicable.

If a physical interface is attached to multiple networks, you cannot advertise these networks in different RIP processes.

Examples

Enable RIP process 100 on the interface attached to the network 129.102.0.0.

```
<Sysname> system-view
[Sysname] rip 100
[Sysname-rip-100] network 129.102.0.0
```

Related commands

rip enable

non-stop-routing

Use **non-stop-routing** to enable RIP NSR.

Use **undo non-stop-routing** to disable RIP NSR.

Syntax

non-stop-routing

undo non-stop-routing

Default

RIP NSR is disabled.

Views

RIP view

Predefined user roles

network-admin

Usage guidelines

RIP NSR enabled for a RIP process takes effect only on that process. As a best practice, enable RIP NSR for each process if multiple RIP processes exist.

The **non-stop-routing** command and the **graceful-restart** command are mutually exclusive.

Examples

Enable NSR for RIP process 1.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] non-stop-routing
```

output-delay

Use **output-delay** to set the rate at which an interface sends RIP packets.

Use **undo output-delay** to restore the default.

Syntax

output-delay *time* **count** *count*

undo output-delay

Default

An interface sends up to three RIP packets every 20 milliseconds.

Views

RIP view

Predefined user roles

network-admin

Parameters

time: Specifies the sending interval in the range of 10 to 100 milliseconds.

count: Specifies the maximum number of RIP packets sent at each interval, in the range of 1 to 30.

Examples

Configure all interfaces running RIP process 1 to send up to 10 RIP packets every 60 milliseconds.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] output-delay 60 count 10
```

peer

Use **peer** to specify a RIP neighbor in the NBMA network, where routing updates destined for the neighbor are only unicasts and not multicast or broadcast.

Use **undo peer** to remove a RIP neighbor.

Syntax

peer *ip-address*

undo peer *ip-address*

Default

RIP does not unicast updates to any neighbor.

Views

RIP view

Predefined user roles

network-admin

Parameters

ip-address: Specifies the IP address of a RIP neighbor, in dotted decimal notation.

Usage guidelines

Do not use the **peer** *ip-address* command when the neighbor is directly connected. Otherwise, the neighbor might receive both unicast and multicast (or broadcast) messages with the same routing information.

This command must be executed together with the **undo validate-source-address** command, which disables source IP address check on inbound RIP routing updates.

Examples

Configure RIP to unicast updates to peer 202.38.165.1.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] peer 202.38.165.1
```

Related commands

validate-source-address

preference

Use **preference** to specify a preference for RIP routes.

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

Syntax

preference { *preference* | **route-policy** *route-policy-name* } *

undo preference

Default

The preference of RIP routes is 100.

Views

RIP view

Predefined user roles

network-admin

Parameters

preference: Specifies a preference for RIP routes, in the range of 1 to 255. The smaller the value, the higher the preference.

route-policy *route-policy-name*: Specifies a routing policy by its name, a case-sensitive string of 1 to 63 characters.

Usage guidelines

You can specify a routing policy by using the keyword **route-policy** to set a preference for matching RIP routes.

- The preference set by the routing policy applies to all matching RIP routes. The preference of other routes is set by the **preference** command.
- If no preference is set by the routing policy, the preference of all RIP routes is set by the **preference** command.

Examples

Set a preference of 120 for RIP routes.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] preference 120
```

reset rip process

Use **reset rip process** to reset a RIP process.

Syntax

reset rip *process-id* **process**

Views

User view

Predefined user roles

network-admin

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

Usage guidelines

After executing the command, you are prompted to confirm the operation.

Examples

Reset RIP process 100.

```
<Sysname> reset rip 100 process
Reset RIP process? [Y/N]:y
```

reset rip statistics

Use **reset rip statistics** to clear statistics for a RIP process.

Syntax

reset rip *process-id* **statistics**

Views

User view

Predefined user roles

network-admin

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

Examples

Clear statistics for RIP process 100.

```
<Sysname> reset rip 100 statistics
```

rip

Use **rip** to enable RIP and enter RIP view.

Use **undo rip** to disable RIP.

Syntax

rip [*process-id*] [**vpn-instance** *vpn-instance-name*]

undo rip [*process-id*]

Default

RIP is disabled.

Views

System view

Predefined user roles

network-admin

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535. The default is 1.

vpn-instance *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, the RIP process runs on the public network.

Usage guidelines

You must enable a RIP process before configuring global parameters for it. This restriction does not apply to configuring interface parameters.

If you disable a RIP process, the configured interface parameters become invalid.

Examples

Enable RIP process 1 and enter RIP view.

```
<Sysname> system-view
[Sysname] rip
```

```
[Sysname-rip-1]
```

rip authentication-mode

Use **rip authentication-mode** to configure RIPv2 authentication.

Use **undo rip authentication-mode** to restore the default.

Syntax

rip authentication-mode { **md5** { **rfc2082** { **cipher** | **plain** } *string key-id* | **rfc2453** { **cipher** | **plain** } *string* } | **simple** { **cipher** | **plain** } *string* }

undo rip authentication-mode

Default

RIPv2 authentication is not configured.

Views

Interface view

Predefined user roles

network-admin

Parameters

md5: Specifies the MD5 authentication.

rfc2082: Uses the message format defined in RFC 2082.

cipher: Specifies a password in encrypted form.

plain: Specifies a password in plaintext form. For security purposes, the password specified in plaintext form will be stored in encrypted form.

string: Specifies the password. Its plaintext form is a case-sensitive string of 1 to 16 characters. Its encrypted form is a case-sensitive string of 33 to 53 characters.

key-id: Specifies the key ID in the range of 1 to 255.

rfc2453: Uses the message format defined in RFC 2453 (IETF standard).

simple: Specifies the simple authentication mode.

Usage guidelines

A newly configured key overwrites the old one, if any.

Although you can specify an authentication mode for RIPv1 in interface view, the configuration does not take effect because RIPv1 does not support authentication.

Examples

Configure MD5 authentication on VLAN-interface 10 and specify a plaintext key **rose** in the format defined in RFC 2453.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip version 2
[Sysname-Vlan-interface10] rip authentication-mode md5 rfc2453 plain rose
```

Related commands

rip version

rip bfd enable

Use **rip bfd enable** to enable BFD for RIP on an interface.

Use **undo rip bfd enable** to restore the default.

Syntax

rip bfd enable

undo rip bfd enable

Default

BFD for RIP is disabled on an interface.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

RIP supports BFD echo-mode detection for a directly connected neighbor, and BFD control-mode detection for an indirectly neighbor.

BFD echo-mode detection only applies to a RIP neighbor one hop away.

Using the **undo peer** command does not delete the neighbor relationship immediately and cannot bring down the BFD session immediately.

The **rip bfd enable** command and the **rip bfd enable destination** command are mutually exclusive and cannot be configured on a device at the same time.

Examples

Enable BFD for RIP on VLAN-interface 11.

```
<Sysname> system-view
[Sysname] interface vlan-interface 11
[Sysname-Vlan-interface11] rip bfd enable
```

rip bfd enable destination

Use **rip bfd enable destination** to enable BFD single-hop echo detection for a specific destination.

Use **undo rip bfd enable** to disable BFD single-hop echo detection for RIP.

Syntax

rip bfd enable destination *ip-address*

undo rip bfd enable

Default

BFD single-hop echo detection for a specific destination is disabled on an interface.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

When a link failure occurs between the local device and the specified neighbor, BFD can detect the failure. The local device will not receive or send any RIP packets through the interface connected to the neighbor.

The **rip bfd enable destination** command applies only to BFD echo-mode detection.

The **rip bfd enable destination** command and the **rip bfd enable** command are mutually exclusive and cannot be configured on a device at the same time.

Examples

Enable BFD on VLAN-interface 10 for a specific destination 202.38.165.1.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip bfd enable destination 202.38.165.1
```

rip default-route

Use **rip default-route** to configure a RIP interface to advertise a default route with a specified metric.

Use **undo rip default-route** to disable a RIP interface from sending a default route.

Syntax

rip default-route { { **only** | **originate** } [**cost** *cost-value* | **route-policy** *route-policy-name*] * | **no-originate** }

undo rip default-route

Default

A RIP interface advertises a default route if the RIP process that the interface runs is enabled to advertise a default route.

Views

Interface view

Predefined user roles

network-admin

Parameters

only: Advertises only a default route.

originate: Advertises both a default route and other routes.

cost-value: Specifies a cost for the default route, in the range of 1 to 15. The default is 1.

route-policy *route-policy-name*: Specifies a routing policy by its name, a case sensitive string of 1 to 63 characters. If you specify this option, the command advertises a default route only when a route in the routing table matches the routing policy.

no-originate: Advertises only non-default routes.

Usage guidelines

An interface that is enabled to advertise a default route does not receive any default route from RIP neighbors.

Examples

Configure VLAN-interface 10 to advertise only a default route with a metric of 2.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
```

```
[Sysname-Vlan-interface10] rip default-route only cost 2
```

Configure VLAN-interface 10 to advertise a default route with a metric of 2 and other routes.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip default-route originate cost 2
```

Related commands

default-route

rip enable

Use **rip enable** to enable RIP on an interface.

Use **undo rip enable** to disable RIP on an interface.

Syntax

rip *process-id* **enable** [**exclude-subip**]

undo rip enable

Default

RIP is disabled on an interface.

Views

Interface view

Predefined user roles

network-admin

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

exclude-subip: Excludes secondary IP addresses from being enabled with RIP. If you do not specify this keyword, RIP is also enabled on secondary IP addresses of a RIP-enabled interface.

Usage guidelines

The **rip enable** command has a higher priority than the **network** command.

Examples

Enable RIP process 100 on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip 100 enable
```

Related commands

network

rip input

Use **rip input** to enable an interface to receive RIP messages.

Use **undo rip input** to disable an interface from receiving RIP messages.

Syntax

rip input

undo rip input

Default

An interface is enabled to receive RIP messages.

Views

Interface view

Predefined user roles

network-admin

Examples

Disable VLAN-interface 10 from receiving RIP messages.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] undo rip input
```

rip max-packet-length

Use **rip max-packet-length** to set the maximum length of RIP packets.

Use **undo rip max-packet-length** to restore the default.

Syntax

rip max-packet-length *value*

undo rip max-packet-length

Default

The maximum length of RIP packets is 512 bytes.

Views

Interface view

Predefined user roles

network-admin

Parameters

value: Specifies the maximum length of RIP packets, in the range of 32 to 65535 bytes.

Usage guidelines

The supported maximum length of RIP packets varies by vendor. Use this feature with caution to avoid compatibility issues.

When authentication is enabled, follow these guidelines to ensure packet forwarding:

- For simple authentication, the maximum length of RIP packets must be no less than 52 bytes.
- For MD5 authentication (with packet format defined in RFC 2453), the maximum length of RIP packets must be no less than 56 bytes.
- For MD5 authentication (with packet format defined in RFC 2082), the maximum length of RIP packets must be no less than 72 bytes.

If the configured value in the **rip max-packet-length** command is greater than the MTU of an interface, the interface MTU value is used as the maximum length of RIP packets.

Examples

Set the maximum length of RIP packets on VLAN-interface 10 to 1024 bytes.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
```

```
[Sysname-Vlan-interface10] rip max-packet-length 1024
```

rip metricin

Use **rip metricin** to configure an interface to add a metric to inbound routes.

Use **undo rip metricin** to restore the default.

Syntax

rip metricin [**route-policy** *route-policy-name*] *value*

undo rip metricin

Default

The additional metric of an inbound route is 0.

Views

Interface view

Predefined user roles

network-admin

Parameters

route-policy *route-policy-name*: Specifies a routing policy by its name, a case sensitive string of 1 to 63 characters. If you specify this option, the command adds an additional metric for the routes that match the routing policy.

value: Adds an additional metric to inbound routes, in the range of 0 to 16.

Usage guidelines

When a valid RIP route is received, the system adds a metric to it and then installs it into the routing table. The metric of the route received on the configured interface is then increased. If the sum of the additional metric and the original metric is greater than 16, the metric of the route will be 16.

If a routing policy is referenced with the **route-policy** keyword, the following operations can be performed:

- Routes matching the policy are added with the metric specified in the **apply cost** command configured in the policy. Routes not matching it are added with the metric specified in the **rip metricin** command. The **rip metricin** command does not support specifying the **+** or **–** keyword in the **apply cost** command to add or reduce a metric.
- If the **apply cost** command is not configured in the policy, all the inbound routes are added with the metric specified in the **rip metricin** command.

Examples

Configure VLAN-interface 10 to add a metric of 6 to the inbound route 1.0.0.0/8 and to add a metric of 2 to other inbound routes.

```
<Sysname> system-view
[Sysname] ip prefix-list 123 permit 1.0.0.0 8
[Sysname] route-policy abc permit node 10
[Sysname-route-policy-abc-10] if-match ip address prefix-list 123
[Sysname-route-policy-abc-10] apply cost 6
[Sysname-route-policy-abc-10] quit
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip metricin route-policy abc 2
```

Related commands

apply cost

rip metricout

Use **rip metricout** to configure an interface to add a metric to outbound routes.

Use **undo rip metricout** to restore the default.

Syntax

rip metricout [**route-policy** *route-policy-name*] *value*

undo rip metricout

Default

The additional metric for outbound routes is 1.

Views

Interface view

Predefined user roles

network-admin

Parameters

route-policy *route-policy-name*: Specifies a routing policy by its name, a case sensitive string of 1 to 63 characters. If you specify this option, the command adds an additional metric for the routes that match the routing policy.

value: Adds an additional metric to outbound routes, in the range of 1 to 16.

Usage guidelines

With the command configured on an interface, the metric of RIP routes sent on the interface will be increased.

If a routing policy is referenced with the **route-policy** keyword, the following operations can be performed:

- Routes matching the policy is added with the metric specified in the **apply cost** command configured in the policy. Routes not matching it are added with the metric specified in the **rip metricout** command. The **rip metricout** command does not support specifying the **+** or **–** keyword in the **apply cost** command to add or reduce a metric.
- If the **apply cost** command is not configured in the policy, all the outbound routes are added with the metric specified in the **rip metricout** command.

Examples

Configure VLAN-interface 10 to add a metric of 6 to the outbound route 1.0.0.0/8 and to add a metric of 2 to other outbound routes.

```
<Sysname> system-view
[Sysname] ip prefix-list 123 permit 1.0.0.0 8
[Sysname] route-policy abc permit node 10
[Sysname-route-policy-abc-10] if-match ip address prefix-list 123
[Sysname-route-policy-abc-10] apply cost 6
[Sysname-route-policy-abc-10] quit
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip metricout route-policy abc 2
```

Related commands

apply cost

rip mib-binding

Use **rip mib-binding** to bind a RIP process to MIB.

Use **undo rip mib-binding** to restore the default.

Syntax

rip mib-binding *process-id*

undo rip mib-binding

Default

MIB operation is bound to the RIP process with the smallest process ID.

Views

System view

Predefined user roles

network-admin

Parameters

process-id: Specifies a RIP process by its ID in the range of 1 to 65535.

Usage guidelines

If the specified process ID does not exist, the MIB binding configuration does not take effect.

Deleting a RIP process bound to MIB operation deletes the MIB binding configuration. After the RIP process is deleted, MIB operation is bound to the RIP process with the smallest process ID.

Examples

Bind RIP process 100 to MIB.

```
<Sysname> system-view
[Sysname] rip mib-binding 100
```

rip output

Use **rip output** to enable an interface to send RIP messages.

Use **undo rip output** to disable an interface from sending RIP messages.

Syntax

rip output

undo rip output

Default

An interface sends RIP messages.

Views

Interface view

Predefined user roles

network-admin

Examples

Disable VLAN-interface 10 from sending RIP messages.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
```

```
[Sysname-Vlan-interface10] undo rip output
```

rip output-delay

Use **rip output-delay** to set the RIP packet sending interval for an interface and the maximum number of RIP packets that can be sent at each interval.

Use **undo rip output-delay** to restore the default.

Syntax

rip output-delay *time* **count** *count*

undo rip output-delay

Default

An interface uses the RIP packet sending rate set for the RIP process that the interface runs.

Views

Interface view

Predefined user roles

network-admin

Parameters

Time: Specifies the RIP packet sending interval in the range of 10 to 100 milliseconds.

count: Specifies the maximum number of RIP packets sent at each interval, in the range of 1 to 30.

Examples

Configure VLAN-interface 10 to send a maximum of six RIP packets every 30 milliseconds.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip output-delay 30 count 6
```

Related commands

output-delay

rip poison-reverse

Use **rip poison-reverse** to enable the poison reverse feature.

Use **undo rip poison-reverse** to disable the poison reverse feature.

Syntax

rip poison-reverse

undo rip poison-reverse

Default

The poison reverse feature is disabled.

Views

Interface view

Predefined user roles

network-admin

Examples

Enable the poison reverse feature on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip poison-reverse
```

rip primary-path-detect bfd echo

Use **rip primary-path-detect bfd echo** to enable BFD single-hop echo detection for RIP FRR.

Use **undo rip primary-path-detect bfd** to disable BFD single-hop echo detection for RIP FRR.

Syntax

rip primary-path-detect bfd echo

undo rip primary-path-detect bfd

Default

BFD single-hop echo detection for RIP FRR is disabled.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

For quicker RIP FRR, use BFD single-hop echo detection on the primary link of redundant links to detect link failure.

Examples

Enable BFD single-hop echo detection for RIP FRR on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] fast-reroute route-policy frr
[Sysname-rip-1] quit
[Sysname] bfd echo-source-ip 1.1.1.1
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip primary-path-detect bfd echo
```

rip split-horizon

Use **rip split-horizon** to enable the split horizon feature.

Use **undo rip split-horizon** to disable the split horizon feature.

Syntax

rip split-horizon

undo rip split-horizon

Default

The split horizon feature is enabled.

Views

Interface view

Predefined user roles

network-admin

Usage guidelines

The split horizon feature prevents routing loops. If you want to disable the feature, make sure the operation is necessary.

If both split horizon and poison reverse are enabled, only the poison reverse feature takes effect.

Examples

Enable the split horizon feature on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip split-horizon
```

rip summary-address

Use **rip summary-address** to configure a summary route on an interface.

Use **undo rip summary-address** to remove a summary route on an interface.

Syntax

rip summary-address *ip-address* { *mask-length* | *mask* }

undo rip summary-address *ip-address* { *mask-length* | *mask* }

Default

No summary route is configured on an interface.

Views

Interface view

Predefined user roles

network-admin

Parameters

ip-address: Specifies the destination IP address of the summary route.

mask-length: Specifies the subnet mask length of the summary route, in the range of 0 to 32.

mask: Specifies the subnet mask of the summary route, in dotted decimal notation.

Usage guidelines

This command takes effect only when automatic route summarization is disabled.

Examples

Configure a summary route on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip summary-address 10.0.0.0 255.255.255.0
```

Related commands

summary

rip version

Use **rip version** to specify a RIP version on an interface.

Use **undo rip version** to restore the default.

Syntax

rip version { **1** | **2** [**broadcast** | **multicast**] }

undo rip version

Default

No RIP version is configured on an interface. The interface can send RIPv1 broadcasts, and receive RIPv1 broadcasts and unicasts, and RIPv2 broadcasts, multicasts, and unicasts.

Views

Interface view

Predefined user roles

network-admin

Parameters

1: Specifies the RIP version as RIPv1.

2: Specifies the RIP version as RIPv2.

[**broadcast** | **multicast**]: Sends RIPv2 messages in broadcast mode or multicast mode (default).

Usage guidelines

If an interface has no RIP version configured, it uses the global RIP version. Otherwise, it uses the RIP version configured on it.

An interface running RIPv1 can perform the following operations:

- Sends RIPv1 broadcast messages.
- Receives RIPv1 broadcast and unicast messages.

An interface running RIPv2 in broadcast mode can perform the following operations:

- Sends RIPv2 broadcast messages.
- Receives RIPv1 broadcast and unicast messages, and RIPv2 broadcast, multicast, and unicast messages.

An interface running RIPv2 in multicast mode can perform the following operations:

- Sends RIPv2 multicast messages.
- Receives RIPv2 broadcast, multicast, and unicast messages.

Examples

Configure RIPv2 in broadcast mode on VLAN-interface 10.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] rip version 2 broadcast
```

Related commands

version

silent-interface

Use **silent-interface** to disable interfaces from sending RIP messages. The interfaces can still receive RIP messages.

Use **undo silent-interface** to enable interfaces to send RIP messages.

Syntax

silent-interface { *interface-type interface-number* | **all** }

undo silent-interface { *interface-type interface-number* | **all** }

Default

All RIP interfaces can send RIP messages.

Views

RIP view

Predefined user roles

network-admin

Parameters

interface-type interface-number: Disables a specified interface from sending RIP messages.

all: Disables all interfaces from sending RIP messages.

Examples

Disable all VLAN interfaces from sending RIP messages except VLAN-interface 10.

```
<Sysname> system-view
[Sysname] rip 100
[Sysname-rip-100] silent-interface all
[Sysname-rip-100] undo silent-interface vlan-interface 10
[Sysname-rip-100] network 131.108.0.0
```

summary

Use **summary** to enable automatic RIPv2 route summarization. Natural masks are used to advertise summary routes to reduce the size of routing tables.

Use **undo summary** to disable automatic RIPv2 route summarization to advertise all subnet routes.

Syntax

summary

undo summary

Default

Automatic RIPv2 route summarization is enabled.

Views

RIP view

Predefined user roles

network-admin

Usage guidelines

Automatic RIPv2 route summarization can reduce the routing table size to enhance the scalability and efficiency for large networks.

Examples

Disable automatic RIPv2 route summarization.

```
<Sysname> system-view
[Sysname] rip
[Sysname-rip-1] undo summary
```

Related commands

rip summary-address

rip version

timer triggered

Use **timer triggered** to set the interval for sending triggered updates.

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

Syntax

timer triggered *maximum-interval* [*minimum-interval* [*incremental-interval*]]

undo timer triggered

Default

The maximum interval is 5 seconds, the minimum interval is 50 milliseconds, and the incremental interval is 200 milliseconds.

Views

RIP view

Predefined user roles

network-admin

Parameters

maximum-interval: Specifies the maximum interval in the range of 1 to 5 seconds.

minimum-interval: Specifies the minimum interval in the range of 10 to 5000 milliseconds.

incremental-interval: Specifies the incremental interval in the range of 100 to 1000 milliseconds.

Usage guidelines

The *minimum-interval* and *incremental-interval* cannot be greater than the *maximum-interval*.

For a stable network, the *minimum-interval* setting is used. If network changes become frequent, the incremental interval *incremental-interval* is used to extend the triggered update sending interval until the *maximum-interval* is reached.

Examples

For RIP process 1, set the maximum interval, minimum interval, and incremental interval to 2 seconds, 100 milliseconds, and 100 milliseconds, respectively.

```
<Sysname> system-view
[Sysname] rip 1
[Sysname-rip-1] timer triggered 2 100 100
```

timers

Use **timers** to set RIP timers.

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

Syntax

timers { **garbage-collect** *garbage-collect-value* | **suppress** *suppress-value* | **timeout** *timeout-value* | **update** *update-value* } *

undo timers { **garbage-collect** | **suppress** | **timeout** | **update** } *

Default

The garbage-collect timer is 120 seconds, the suppress timer is 120 seconds, the timeout timer is 180 seconds, and the update timer is 30 seconds.

Views

RIP view

Predefined user roles

network-admin

Parameters

garbage-collect-value: Specifies the garbage-collect timer in the range of 1 to 3600 seconds.

suppress-value: Specifies the suppress timer in the range of 0 to 3600 seconds.

timeout-value: Specifies the timeout timer in the range of 1 to 3600 seconds.

update-value: Specifies the update timer in the range of 1 to 3600 seconds.

Usage guidelines

RIP uses the following timers:

- **Update timer**—Specifies the interval between routing updates.
- **Timeout timer**—Specifies the route aging time. If no update for a route is received before the timer expires, RIP sets the metric of the route to 16.
- **Suppress timer**—Specifies how long a RIP route stays in suppressed state. When the metric of a route becomes 16, the route enters the suppressed state. If RIP receives an update for the route with a metric less than 16 from the same neighbor, RIP uses this route to replace the suppressed route.
- **Garbage-collect timer**—Specifies the interval from when the metric of a route becomes 16 to when it is deleted from the routing table. During the garbage-collect timer length, RIP advertises the route with a metric of 16. If no update is announced for that route before the garbage-collect timer expires, RIP deletes the route from the routing table.

As a best practice, do not change the default values of these timers.

The timer lengths must be consistent on all routers on the network.

The timeout timer must be greater than the update timer.

Examples

Set the update, timeout, suppress, and garbage-collect timers to 5, 15, 15, and 30 seconds.

```
<Sysname> system-view
[Sysname] rip 100
[Sysname-rip-100] timers update 5 timeout 15 suppress 15 garbage-collect 30
```

validate-source-address

Use **validate-source-address** to enable source IP address check on inbound RIP routing updates.

Use **undo validate-source-address** to disable source IP address check on inbound RIP routing updates.

Syntax

validate-source-address

undo validate-source-address

Default

Source IP address check on inbound RIP routing updates is enabled.

Views

RIP view

Predefined user roles

network-admin

Examples

Disable source IP address check on inbound RIP routing updates.

```
<Sysname> system-view
[Sysname-rip] rip 100
[Sysname-rip-100] undo validate-source-address
```

version

Use **version** to specify a global RIP version.

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

Syntax

version { **1** | **2** }

undo version

Default

No global RIP version is configured. An RIP interface can send RIPv1 broadcasts and receive RIPv1 broadcasts and unicasts, and RIPv2 broadcasts, multicasts, and unicasts.

Views

RIP view

Predefined user roles

network-admin

Parameters

1: Specifies the RIP version as RIPv1.

2: Specifies the RIP version as RIPv2. RIPv2 messages are multicast.

Usage guidelines

An interface prefers the RIP version configured on it over the global RIP version.

If no RIP version is specified for the interface and the global version is RIPv1, the interface uses RIPv1 and can perform the following operations:

- Send RIPv1 broadcasts.
- Receive RIPv1 broadcasts and unicasts.

If no RIP version is specified for the interface and the global version is RIPv2, the interface uses RIPv2 multicast mode and can perform the following operations:

- Send RIPv2 multicasts.
- Receive RIPv2 broadcasts, multicasts, and unicasts.

Examples

Specify the global RIP version as RIPv2.

```
<Sysname> system-view
[Sysname] rip 100
[Sysname-rip-100] version 2
```

Related commands

rip version