

## RIPng Configuration Commands

# Table of Contents

Chapter 1 Ripng Commands .....	1
1.1 aggregate-address .....	1
1.2 debug ipv6 rip .....	1
1.3 default-information.....	2
1.4 default-metric.....	3
1.5 connect-metric .....	4
1.6 distance .....	4
1.7 filter .....	5
1.8 ipv6 rip enable .....	6
1.9 ipv6 rip passive.....	7
1.10 ipv6 rip poison-reverse .....	8
1.11 ipv6 rip split-horizon.....	9
1.12 router ripng .....	9
1.13 max-path .....	10
1.14 neighbor .....	11
1.15 offset.....	11
1.16 port .....	12
1.17 redistribute.....	13
1.18 show ipv6 rip.....	14
1.19 timers.....	15

## Chapter 1 Ripng Commands

### 1.1 aggregate-address

To designate the aggregation route of the RIPNG instances, run the following first one of the commands:

**aggregate-address** *X:X:X::X/<0-128>*

**no aggregate-address** *X:X:X::X/<0-128>*

#### Parameter

*X:X:X::X/<0-128>*

Designates the prefix of IPv6 aggregation network.

#### Default value

There is no aggregation route.

#### Command mode

RIPNG configuration mode

#### Instruction

None

#### Example

The following example shows how to aggregate the sub-route of 2006:4:5::/35:

```
Router_config_ripng_r1#aggregate-address 2006:4:5::/35
```

#### Related command

None

### 1.2 debug ipv6 rip

To open the RIPNG debug switch, run the first one of the following two commands:

**debug ipv6 rip** [*word*] [ *events* | *send* | *receive* | *database* | *all* ]

**no debug ipv6 rip**

#### Parameter

*word*

Stands for the name of the RIPNG instance.

events

Displays the RIP event.

send                      Displays the transmitted RIP packets.

receive                    Displays the received RIP packets.

database                   Displays the detailed change of the RIPNG route.

all                         Opens all debug items.

#### **Default value**

All debug items are disabled.

#### **Command mode**

EXEC

#### **Instruction**

This command can be used to trace the main procedures of RIPNG.

#### **Example**

```
router# debug ipv6 rip r1 event
```

The example shows how to enable the debugging switch of the RIPNG event.

#### **Related command**

None

## **1.3 default-information**

To notify the default route, run the following command:

**default-information {only | originate} [metric\_value]**

**no default-information {only | originate} [metric\_value]**

#### **Parameter**

metric\_value              It is an optional parameter, which is used to specify the default metric value of the default route.

#### **Default value**

There is no default route and the default metric value is 1.

#### **Command mode**

RIPNG configuration mode

**Instruction**

No matter whether a default route exists in the main routing table, another default route will be generated in the RIPNG routing table; and if the following parameters exist, you have to know their meaning respectively:

only: only the default route is notified.

originate: both the current route and the default route are notified.

**Example**

The following example shows how to generate the default route and how to notify only the default route:

```
Router_config_ripng_r1# default-information only
```

**Related command**

None

## 1.4 default-metric

To designate the default metric of the forward-route, run the first one of the following commands:

**default-metric value**

**no default-metric**

**Parameter**

value

It is used to specify the default metric value of the forward-route, which ranges between 1 and 15. .

**Default value**

The default metric of the forward-route is 1.

**Command mode**

RIPNG configuration mode

**Instruction**

The metric ranges between 1 and 15 and it is used to specify the default metric when RIPNG forwards other protocols and RIPNG instances.

**Example**

```
Router_config_ripng_r1#default-metric 3
```

The above-mentioned example shows how to set the metric of route forwarding to 3.

**Related command**

redistribute

## 1.5 connect-metric

To specify the default metric of the directly-connected route, run the first one of the following commands:

**connect-metric value**

**no connect-metric**

**Parameter**

value

It is used to specify the default metric value of the directly-connected route, which ranges between 1 and 15. .

**Default value**

The default metric the directly-connected route is 1.

**Command mode**

RIPNG configuration mode

**Instruction**

The metric ranges between 1 and 15 and is used to specify the default metric of the RIPNG directly-connected route.

**Example**

```
Router_config_ripng_r1#connect-metric 3
```

The above-mentioned example shows how to set the metric of the directly-connected route to 3.

**Related command**

redistribute

## 1.6 distance

To set the management distance, run the first one of the following two commands:

**distance weight** [ X:X:X:X::X/<0-128> [Acc-list\_name]

**no distance weight** [ X:X:X:X::X/<0-128> [Acc-list\_name]

**Parameter**

Parameter	Remarks
Weight	Stands for the management distance, ranging between 1 and 255. It is recommended to set it to a value between 10 and 255. If the parameter is used alone, the router will take it as the default management distance if the router does not have relative regulations about a routing information. When the management distance of a route is 255, this route will not be added to the routing table.
X:X:X:X/<0-128>	This parameter is optional. It stands for the prefix of the source IPv6.
Acc-list_name	This parameter is optional. It stands for the IP access control list.

**Default value**

The default RIPNG management distance is 120.

**Command mode**

RIPNG configuration mode

**Instruction**

The management distance is an integer from 0 to 255. In general, the bigger the value is, the more incredible the value is. If the optional parameter, **access-list-name**, is used in the command, the access control list is applied when a one-hop route is added to the routing table. In this way, you can filter the paths of some network according to the address of the router provided by the routing information.

**Example**

The following example shows that the distance of the route received from network **af::/64** is set to 100.

```
router ripng r1
distance 100 af::/64
```

**Related command**

None

**1.7 filter**

To set the filtration for RIPNG route reception and transmission, run the first one of the following two commands.

**filter** *interface-type interface-number {in | out}* access-list | gateway | prefix-list

**no filter** *interface-type interface-number {in | out}* access-list | gateway | prefix-list

#### Parameter

Parameter	Remarks
<b>interface-type</b>	Designates the interface type.
<b>interface-number</b>	Designates the port ID.
in	Filters the input RIPng routes.
out	Filters the output RIPng routes.
access-list	Uses the ACL to filter routes.
gateway	Uses the ACL to filter gateways.
prefix-list	Uses the prefix list to filter routes.

#### Default value

None

#### Command mode

RIPNG configuration mode

#### Instruction

**This command is used to filter those received and to-be-transmitted RIPng routes.**

#### Example

The following example shows how the routes, received by the RI instance from interface e1/1, are filtered by ACL and added to the routing table if they meet the already configured condition or deleted if they do not meet the above-mentioned condition.

```
Router_config_ripng_r1#filter e1/1 in acc acc-name
```

#### Related command

None

## 1.8 ipv6 rip enable

To enable a RIPng instance on a port, run the first one of the following two commands:



**ipv6 rip** *word* **enable**

**no ipv6 rip** *word* **enable**

**Parameter**

*word*

It stands for the name of the routing process instance.

**Default value**

None

**Command mode**

Port configuration mode

**Instruction**

This command is used to enable a RIPng instance on a port. If no RIPng instance exists and the number of the current instances is less than the maximum, a new instance will be generated and then be enabled.

**Example**

Router\_config# int e2/1

Router\_config\_e2/1# ipv6 rip r1 enable

**Related command**

Show ipv6 rip

## 1.9 ipv6 rip passive

To set the passive port and cancel route update on a port, run the first one of the following two commands:

**ipv6 rip** **passive**

**no ipv6 rip** **passive**

**Parameter**

None

**Default value**

None

**Command mode**

Port configuration mode

**Instruction**

If a port is set to be a passive one, the transmission of update packets will be canceled on this port and the update packets will continually be transmitted out from other ports.

**Example**

The following example shows how to set port e2/1 to be the passive port to receive updated routes but not to transmit them.

```
R142_config_e2/1# ipv6 rip passive
```

**Related command**

None

## 1.10 ipv6 rip poison-reverse

To apply poison reverse on a port, run the first one of the following two commands:

```
ipv6 rip poison-reverse
```

```
no ipv6 rip poison-reverse
```

**Parameter**

word

It stands for the name of the routing process instance.

poison-reverse

It means to enable poison reverse on a port.

**Default value**

The poison reverse is disabled by default.

**Command mode**

Port configuration mode

**Instruction**

This command is used to enable the **word** RIPng instance to enable poison reverse on this port.

**Example**

The following example shows that the R1 RIPng instance enables poison reverse on port e2/1:

```
R142_config_e2/1# ipv6 rip poison-reverse
```

**Related command**

None

## 1.11 ipv6 rip split-horizon

To apply horizontal split on a port, run the first one of the following two commands:

**ipv6 rip split-horizon**

**no ipv6 rip split-horizon**

### Parameter

word	Standing for the name of the routing process instance
split-horizon	Meaning to apply horizontal split on a port

### Default value

The horizontal split is enabled by default.

### Command mode

Port configuration mode

### Instruction

In the default settings, all instances enable the horizontal split.

### Example

The following example shows that the R1 RIPng instance enables the horizontal split on port e2/1:

```
R142_config_e2/1# ipv6 rip split-horizon
```

### Related command

None

## 1.12 router ripng

To set a RIPng instance globally, run the first one of the following two commands:

**router ripng word**

**no router ripng word**

### Parameter

Word	Standing for the name of the RIPng instance
------	---

### Default value

None

**Command mode**

Global configuration mode

**Instruction**

In the default settings, up to 4 RIPng instances can be generated.

After the configuration command is entered, the router prompt changes to **Router\_config\_ripng\_r1#**.

**Example**

```
Router_config#router ripng r1
```

```
Router_config_ripng_r1#
```

**Related command**

ipv6 rip word enable

## 1.13 max-path

To set the number of equivalent routes allowed by the RIPng instance, run the first one of the following two commands:

**max-path** *value*

**no max-path**

**Parameter**

Value

Setting the number of equivalent routes allowed by the RIPng instance

**Default Value**

4

**Command mode**

RIPNG configuration mode

**Instruction**

This command is used to set the maximum of equivalent routes in a RIPng instance and the maximum of equivalent routes is 6.

**Example**

The following example shows how to set the maximum of equivalent routes in the R1 RIPng instance to 5.

```
Router_config_ripng_r1#max-path 5
```

**Related command**

None

## 1.14 neighbor

To specify a neighbor and transmit updates to this specified neighbor, run the first one of the following two commands:

```
neighbor ipv6-addr interface interface-number
```

```
no neighbor ipv6-addr interface interface-number
```

**Parameter**

<i>ipv6-addr</i>	Standing for the IPv6 address
<i>interface</i>	Designating an interface
<i>interface-number</i>	Standing for a port ID

**Default value**

None

**Command mode**

RIPNG configuration mode

**Instruction**

You can use this command to specify an address to be the neighbor of a specific interface and then the routing information transmitted from this port will be sent in the unicast form to the neighbor.

**Example**

The following example shows how to set neighbor **fe::2** on port f0/0.

```
Router_config# router ripng r1
```

```
Router_config_ripng_r1#neighbor fe::2 f0/0
```

**Related command**

None

## 1.15 offset

To set the in/out metric of a RIPng instance on a port, run the first one of the following two commands:

```
offset interface-type interface-number {in | out} acl-name value
```

**no offset** *interface-type interface-number {in | out}*

#### Parameter

Parameter	Remarks
<b>interface-type</b>	Designates the interface type.
<b>interface-number</b>	Designates the port ID.
in	Adds the metric for an incoming RIPng route.
out	Adds the metric for an outgoing RIPng route.
acl-name	<b>Stands for the IP access control list.</b>
value	<b>Adds the specified metric for the received RIPng route.</b>

#### Default value

The default value of the **in** parameter is 1.

The default value of the **out** parameter is 0.

#### Command mode

RIPNG configuration mode

#### Instruction

This command is used to specify the metric for those received and to-be-transmitted RIPng routes.

#### Example

The following example shows that the routes received by the R1 instance from port e1/1 are added with a metric, 8, after ACL filtration and then added to the routing table.

```
Router_config_ripng_r1#offset e1/1 in acc 8
```

#### Related command

None

## 1.16 port

To set a specific UDP port for the RIPng instance, run the following command:

**port** *port-number*

#### Parameter

*port-number*

Standing for the UDP port ID, which is a value between 521 and 65535

**Default value**

521

**Command mode**

RIPNG configuration mode

**Instruction**

You can use this command to specify the UDP port of the Ripng instance. The default value of the UDP port ID is 521. When two instances are enabled on a same port, the UDP port cannot be the same.

**Example**

The following example shows how to set the ID of the UDP port of the R1 instance to 555:

```
Router_config# router ripng r1
```

```
Router_config_rip_r1# port 555
```

**Related command**

None

## 1.17 redistribute

To enable other routing domains to forward routes to RIPng, run the first one of the following two commands:

```
redistribute protocol [ protocol-id | instance name ] [route-map map-name]
```

```
no redistribute protocol [ protocol-id | instance name ] [route-map map-name]
```

**Parameter**

<b>Protocol</b>	Standing for the type of the forwarded protocol
<b><i>protocol-id</i></b>	Standing for the ID of the forwarded process
<i>instance name</i> instance	Standing for the name of the forwarded RIPng

**Default value**

disable

**Command mode**

RIPNG configuration mode

**Instruction**

This command is used to forward the routes from other routing domains and other RIPng instances. The metric of a forwarded route is set by the **default-metric** command and its default value is 1.

**Example**

The following example shows how to forward the BGP route whose AS ID is 4.

```
Router_config_ripng_r1#redis bgp 4 route-map rm
```

**Related command**

None

## 1.18 show ipv6 rip

To display the RIPng related information, run the following command:

```
show ipv6 rip [name] [database | summary | interface]
```

**Parameter**

Name	Standing for the name of the RIPng instance
Database	Displaying the detailed information about the routes of a designated RIPng instance
summary	Displaying the detailed statistics information about the routes of a designated RIPng instance
interface	Displaying where the RIPng instance is enabled

**Default value**

None

**Command mode**

Any non-user mode

**Instruction**

None

**Example**

The following example shows on which port the R1 instance is enabled:

```
router#sho ipv6 rip r1 interface
```

```
ripng instance r1/1 enable on: FastEthernet0/0 , FastEthernet0/1
```

**Related command**



None

## 1.19 timers

To adjust the timeout value in each clocks in RIPng, run the first one of the following two commands:

**timers** *update/holddown/garbage value*

**no timers** *update/holddown/garbage*

### Parameter

<b>Update</b>	Standing for the interval of regular updates
<b>Holddown</b>	Standing for the timeout time of the invalid timer
<b>Garbage</b>	Standing for the waiting time of route deletion

### Default value

Update	30s
Holddown	180s
Garbage	120s

### Command mode

RIPNG configuration mode

### Instruction

Do not adjust the value of each timer randomly. If necessary to do so, you have to note the relationships between 3 timers.

### Example

None

### Related command

None