Title

rip command (RIP-1 and RIP-2 configuration)

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- Description
- Parameters
- Examples

Description

The "*rip*" command allows to configure the routing module. The routing module supports two versions of the Routing Information Protocol: RIP-1 and RIP-2.

WARNING

The "*rip*" command does not support interaction with the OSPF module, use the "*arip*" command to configure redistribution to this protocol.

Syntax:

```
rip start | stop | restart | flush | [-]trace [LEVEL] [syslog] | dump
    | [-]ridhosts [-]mcast
rip IFNAME   [-]v1 [-]v2 [-]in [-]out [-]v1in [-]v1out [-]v2in [-]v2out [-]ag [-]defag
rip IFNAME   peer { NETWORK ... | del }
rip [IFNAME|int:ADDR] [no]export | [no]import } { NETWORK | all | default }
                        [[+|-]metric N] ...
rip [IFNAME|int:ADDR] [no]export | [no]import } { NETWORK | all | default } del
NETWORK:= { NET|HOST } { [/MASK] | [/MASKLEN] }
```

Parameters

Parameter	Description
start | stop | restart	Starts/stops/restarts operation of the RIP module. The current state of the routing module is included to configuration in case of saving by the "*config save*" command.
flush	Resets all export and import filters.

[-]trace [LEVEL] [syslog]	Enables/disables the trace mode.
	• "*LEVEL*" – specifies the detalization level of debug information. Allowed values are follows:
	  ◦ Level 1 – minimum level of events tracing.
	  ◦ Level 2 – tracing of received/sent packets.
	  ◦ Level 3 – tracing of received/sent packets and their contents.
	  ◦ Level 4 – tracing of changes in the kernel routing tables. Default value.
	• "*syslog*" – records diagnostic messages into the system log.

dump	Displays the state of internal routing tables and interfaces of the routing module.
[-]ridhosts	Forbids the export of IP-addresses of local interfaces, if there is a network route going to the same network via the same interface. This is a specific case of aggregation and allows to limit the number of exported routes.
[-]mcast	Allows the exchange of service packets using multicast, otherwise unicast is used.
IFNAME [-]v1 [-]v2 [-]in [-]out [-]v1in [-]v1out [-]v2in [-]v2out	Group of options managing protocol version. Allows to specify protocol versions used for import and for export, for each interface separately. By default RIP-2 is enabled for import and export and RIP-1 is fully disabled.

[-]ag [-]defag	Allows to configure the routes aggregation (by default is disabled). • *"[-]ag"* – enables/disables aggregation of routing information. Allows significantly decrease the volume of routing information transmitted via the network, is applied also to class "*C*" networks. • "*[-]defag*" – enables/disables using of the default route in network prefix aggregation process. **NOTE** Use these parameter with caution. For example, it is better to avoid using it in ring networks where some hosts don't support this mode or static routing is used on some of them. In this case, it may happen that one group of sub networks will appear aggregated in one routing path, and separated in another. On the other hand, aggregation is very useful on the nodes located between two independent parts of the system or used as a gateway to an external network.
IFNAME peer { NETWORK ... | del }	This filter is used to limit nodes number through which routing information is being exchanged. • "*IFNAME"* – the network interface name through which routing information is exchanged. • *"NETWORK"* – range of addresses within which possible partners can be allocated. Routing information will be sent only though those interfaces which addresses correspond with range set. Received information will be dropped if source address does not match in the defined range. • *"del"* – deletes the filter.
Export/import filters	
[IFNAME|int: ADDR]	If name or IP-address of network interface is not specified than filter is working for the whole protocol on all interfaces. For more information about the export / import filter settings, see the section below. • *"ADDR"* – the network interface address. If an interface have a few IP-addresses, this parameter allows to set the filter to specific one. • "*IFNAME"* – the interface name. In this case the filter will work for a whole interface.
[no]export | [no]import }	Defines the direction of data flow. • *"[no]export"* – enables/disables an export of information. • *"[no]import"* – enables/disables an import of information.
{ NETWORK | all | default }	Defines the source of information. • *"NETWORK"* – the address of a network to which the parameter will be applied. • "*default*" – set as a default route. • "*all*" – affects all exported/imported addresses and routes except those that were configured with the "*default*" parameter and the "*NETWORK*" argument.
[[+|-]metric N]	Sets the value or the relative change of the route metric while passing through this node.
exact	Allows to specify an exact IP-address to avoid changes in processing of smaller sub-networks.
del	Deletes the filter. The "*del*" parameter should be set after a network information.

Export/import filters

"*EXPORT"* and "*NOEXPORT"* tables list specify networks that, respectively, must or must not be exported from the router.

"*IMPORT"* and "*NOIMPORT"* tables list specify networks that, respectively, must or must not be imported to the internal tables of the router.

Following rules must be taken into account while filter configuration:

- Filters are viewed in order from less to more general.
- First are considered filters related to specific interface addresses; then, to specific interfaces; then the general ones.
- Individual rules in the tables are ordered according to the same principle: from the smallest networks to the biggest ones, from the more detailed information to the more general.
- By default (when no filters are specified), all routes with their natural metrics are imported and exported.
- If at least one prohibiting filter is enabled, all the rest is assumed as permitted.
- If at least one permitting filter is enabled, all the rest is assumed as prohibited. Therefore, if you have started with a permitting filter, you must continue with permitting filters up to the end. If you have prohibited something, only that particular thing will be prohibited.
- If for a given network a permitting and a prohibiting filter are simultaneously enabled, then the prohibiting filter will take priority.

- To each network / subnet will be applied filters of only one group having the highest priority.

Examples

Enable RIP-1 version and disable RIP-2 for interface import.

```
rip IFNAME v1in -v2in
```

Limit nodes number through which routing information is exchanged. Information will be sent only though interfaces "*10.1.2.3*", "*10.4.5.6*" and all from "*192.168.1.0/16*" range.

```
rip rf5.0 peer 10.1.2.3  10.4.5.6  192.168.1.0/16
```

Set the filter for a whole protocol and all interfaces.

```
rip export all
```

Set the filter for the "*eth0*" network interface.

```
rip eth0 export all
```

Set the filter for "*10.2.3.4*" IP-address.

```
rip int:10.2.3.4 export all
```

Permit export of all routing information, except a private networks "*192.168.9.0/24*", "*192.168.10.0/24*" and "*192.168.20.0/24*", and the default route.

```
rip noexport 192.168.9.0/24  192.168.10.0/24  192.168.20.0/24
rip noexport default
rip export all
```

Delete part of the filter created before.

```
rip noexport 192.168.9.0/24  192.168.10.0/24  192.168.20.0/24 del
```

A route metric values are explicitly specified in exporting/importing filters.

```
rip import 192.168.9.0/24 metric 5
rip export 192.168.9.0/24 metric 7
```

Original metrics values of all routes will be increased by 2.

```
rip export all +metric 2
```

NOTE

When specifying relative metrics change, the resulting value shall never become less than 2 or more than 13.

Title

Forbid the import of the "*10.0.0.0*" network, but the import of the subnetworks is permitted.

```
rip noimport 10.0.0.0/255.0.0.0 exact
```