# IPv4 Dynamic Routing Configuration on RV016, RV042, RV042G, and RV082 VPN Routers

## Objective

Dynamic routing enables the router to adjust automatically to physical changes in the layouts of networks. Through the use of dynamic Routing Information Protocol (RIP) the router calculates the most efficient route for data packets to travel between the source and the destination. The RIP protocol regularly broadcasts routing information to other routers on the network. This allows the router to determine the best route based on the fewest number of hops between the source and the destination. Routers automatically make adjustments to their routing tables based on the information they receive from RIP. This article explains how to configure IPv4 dynamic routing settings on RV016, RV042, RV042G, and RV082 VPN Routers.

## Applicable Devices

- RV016
- RV042
- RV042G
- RV082

## Software Version

- v4.2.1.02

## Dynamic Routing Configuration

Step 1. Log in to the web configuration utility and choose **Setup > Advanced Routing**. The *Advanced Routing* page opens:

## Advanced Routing

| IPv4 | IPv6 |

### Dynamic Routing

Working Mode :          ◉ Gateway          ○ Router

RIP :          ○ Enabled          ◉ Disabled

Receive RIP versions :     None ▾

Transmit RIP versions :     None ▾

### Static Routing

Destination IP :          [          ]

Subnet Mask :          [          ]

Default Gateway :          [          ]

Hop Count (Metric, max. is 15) :     [     ]

Interface :          LAN ▾

Add to list

Delete   Add New

View     Save     Cancel

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## Advanced Routing

| IPv4 | IPv6 |

### Dynamic Routing

Working Mode :          ◉ Gateway          ○ Router

RIP :          ○ Enabled          ◉ Disabled

Receive RIP versions :     None ▾

Transmit RIP versions :     None ▾

**Note**: By default, the IPv4 routing tab appears when the advanced routing window opens. If you do not see this window when you open advanced routing, click the IPv4 tab under the heading Advanced Routing.

Step 2. Click the desired radio button in the Working Mode field. This will determine how the device operates.

• Gateway — Choose this option if the router serves as the gateway to the Internet of your network. This is the default setting.

• Router — If a different router in your network is the gateway to the Internet, choose this option. In this mode, another router must serve as the gateway for internet connectivity.

**Note:** Since firewall protection is provided by the Gateway router, disable the firewall on this router because it is not necessary once Router is clicked in Step 2. Please refer to the article *General Firewall Settings on the RV042, RV042G, and RV082 VPN Routers* for specific instructions on disabling the firewall.

Step 3. In the RIP field click the desired radio button to implement RIP. Routing Information Protocol (RIP) allows a router to exchange its routing information automatically with other routers. RIP gives routers the ability to change their routing tables as the network changes. RIP also prevents routing loops with a hop limit rule.

• Enabled — This option enables the RIP routing protocol on the device.

• Disabled — This option disables the RIP routing protocol on the device. By default RIP is disabled on the device. If you choose to disable RIP on the device then skip to Step 6.
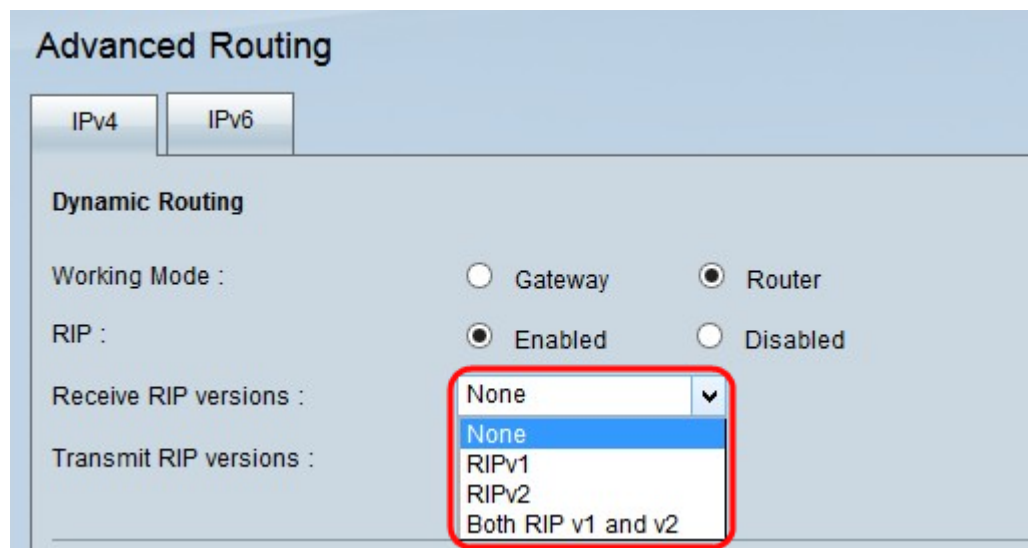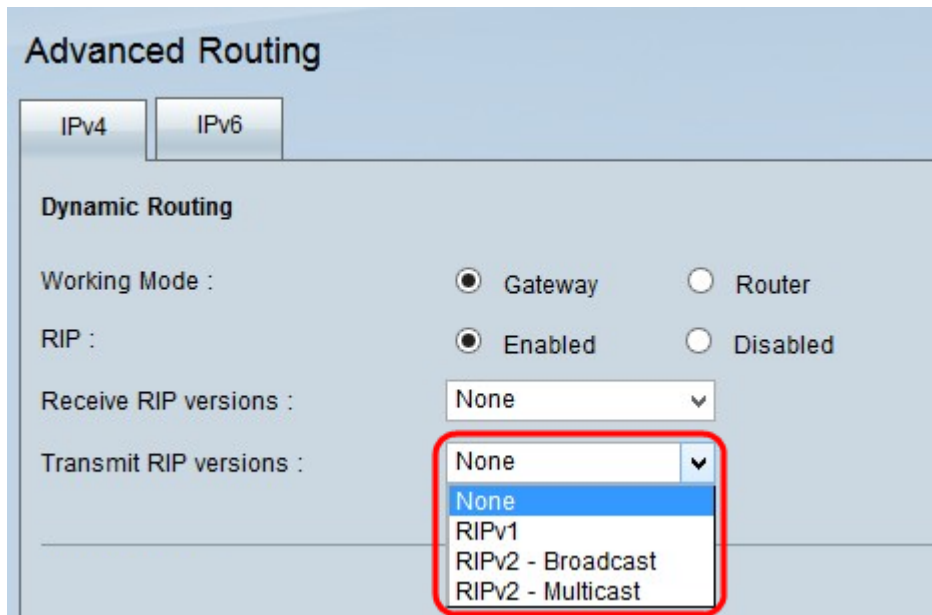


Step 4. Choose which RIP version data is to be received on the network from the Receive RIP versions drop-down list.

**Note:** These options are only available if RIP is enabled on the device as performed in Step 3.

• None — If you do not want the device to accept any RIP version network data from the other devices choose this option.

• RIPv1 — If you want the device to receive only the RIP version 1 network data, choose this option. RIPv1 does not carry any subnet information, so all devices must be in the same network or on subnets of the same size for it to operate correctly.

• RIPv2 — If you want the device to receive only the RIP version 2 network data, choose this option. RIPv2 carries subnet information; networks that have variable length subnets work with this version of RIP. This form of RIP also supports multicast and password

authentication.

• Both RIP v1 and v2 — If you want the device to receive both RIP version 1 and version 2, choose this option. This option allows for networks that have devices transmitting both RIPv1 and RIPv2 data.



Step 5. Choose which RIP version is to be used for the transmission of network data from the Transmit RIP versions drop-down list.

**Note:** These options are only available if RIP is enabled on the device as performed in Step 3.

• None — If you do not want the device to transmit any RIP version network data, choose this option.

• RIPv1 — If you want the device to transmit only the RIP version 1 network data, choose this option. It is recommended as many devices support RIP v1.

• RIPv2 - Broadcast — If you want the device to broadcast only the RIP version 2 network data within the entire subnet, choose this option.

• RIPv2 - Multicast — If you want the device to transmit the RIP version 2 network data to its adjacent routers instead of broadcast in the subnet in order to avoid the overload of RIP version network data, choose this option.

Step 6. (Optional) To view the routing table entries, click **View**. The Routing table entry window appears with the all the routing tables on the device.



The above fields are explained as follows.

• Destination IP — The destination IP address. This address refers to the destination of a data packet.

• Subnet Mask — The subnet mask of the network.

• Default Gateway — The default gateway used in the network. A default gateway is the designation given to the router that can access other networks such as the Internet.

• Hop Count — The number of hops crossed to reach the destination IP. Maximum Hop count is 15. Every time a data packet passes through a network device, it has made one hop towards its destination. The hop count refers to the number of hops a data packet has made from its source to its destination.

• Interface — The interface through which the RIP entry is received.

Step 7. (Optional) To refresh the device to new routing table entries, click **Refresh**. Click **Close** to close the routing table entry window.

Step 8. Click **Save** to save all the changes made.