

Bandwidth Limitation for PPTP Users on RV016, RV042, RV042G and RV082 VPN Routers

Objective

Point-To-Point Tunneling Protocol (PPTP) is a network protocol used in the implementation of a Virtual Private Network (VPN). A computer that supports PPTP can create a VPN tunnel with a PPTP server in your network. A PPTP Server allows you to connect securely from a remote location (such as your home) to a Local Area Network (LAN) located in another location, such as your workplace office.

The objective of this article is to show how to limit the bandwidth (upload or download) for clients connected to the router via a PPTP VPN tunnel. Bandwidth limits allow more users to access the router without a decrease in performance. This article explains how to limit the upload speed of PPTP users on RV016, RV042, RV042G and RV082 Series VPN Routers

Applicable Devices

- RV016
- RV042
- RV042G
- RV082

Software Version

- v4.2.2.08

Limit Bandwidth for PPTP Users

Test the Connection Speed

Step 1. Check for an appropriate speed testing website and perform a speed test for the upload and download speeds.

Step 2. Note the download and upload speeds for further reference. These will be compared to the speeds after bandwidth limitations are applied. Our test had a download speed of 1.92Mb/s and an upload speed 1.95 Mb/s.

PPTP Server Configuration

Step 1. Log in to the the Router Configuration Utility and choose **VPN > PPTP Server**. The *PPTP Server* page opens:

PPTP Server

Enable PPTP Server

Connection List

Username	Remote Address	PPTP IP Address
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PPTP Server

Enable PPTP Server

IP Address Range

Range Start :

Range End :

PPTP Server

Username :

New Password :

Confirm New Password :

Step 2. Check the **Enable PPTP Server** check box to enable the PPTP Server on the device.

PPTP Server

Enable PPTP Server

IP Address Range

Range Start :

Range End :

PPTP Server

Username :

New Password :

Confirm New Password :

Step 3. Enter the starting range of the LAN IP address assigned to the first PPTP VPN client in the Range Start field. The default IP is 192.168.1.200.

Step 4. Enter the last LAN IP address of the range assigned to the last PPTP VPN client in the Range End field. The default is 192.168.1.204.

PPTP Server

Enable PPTP Server

IP Address Range

Range Start :

Range End :

PPTP Server

Username :

New Password :

Confirm New Password :

user_1

Step 5. Enter a username for the VPN client in the Username field.

Step 6. Enter a password for the VPN client in the New Password field.

Step 7. Enter the same password again in the Confirm New Password field.

Step 8. Click **Add to List**. This adds the user to the list.

Enable PPTP Server

IP Address Range

Range Start :

Range End :

PPTP Server

Username :

New Password :

Confirm New Password :

user_2

user_1

Connection List

Username	Remote Address	PPTP IP Address
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Step 9. Click **Save** to save the settings.

Step 10. (Optional) If you want to delete any username, click the respective username and click **Delete**.

Step 11. (Optional) To refresh the data, click **Refresh**.

PPTP Server

Username :

New Password :

Confirm New Password :

user_1

user_2

Connection List

Username	Remote Address	PPTP IP Address
user_2	192.168.1.5	192.168.1.200

The Connection List is a read-only list that shows information of VPN clients. You need to configure PPTP VPN connection on Windows for the connection list table. To set PPTP connection for Windows, please refer to the article *Configuration of PPTP Server on a RV082, RV042, RV042G and RV016 for Windows*. The Refresh button updates the data displayed in the Connection List.

Note: Your download speed should not be affected greatly but your upload speed may be low. If the upload speed is low, disable Stateful Packet Inspection (SPI) settings under **Firewall > General** and click **Save Settings**. The Router's firewall uses Stateful Packet Inspection (SPI) to review the information that passes through the firewall. It inspects all packets based on the established connection, prior to passing the packets for processing through a higher protocol layer.

Set rate Limit

This section explains how to configure the rate limit for the addresses in DHCP range.

Step 1. In the router configuration utility choose **System Management > Bandwidth Management**. The *Bandwidth Management* page opens:

Bandwidth Management

The Maximum Bandwidth Provided by ISP

Interface	Upstream (Kbit/sec)	Downstream (Kbit/sec)
WAN1	512	512

Bandwidth Management Type

Type : Rate Control Priority

Interface : WAN1

Service : All Traffic [TCP&UDP/1~65535]

IP : to

Direction : Upstream

Min. Rate : Kbit/sec

Max. Rate : Kbit/sec

Enable :

Step 2. In the Bandwidth Management Type section, click **Rate Control** so that it controls the minimum and maximum rate for both upstream and downstream bandwidth.

Bandwidth Management Type

Type : Rate Control Priority

Interface : WAN1 WAN2

Service : All Traffic [TCP&UDP/1~65535]

IP : 192.168.1.100 to 192.168.1.150

Direction : Upstream

Min. Rate : 256 Kbit/sec

Max. Rate : 380 Kbit/sec

Enable :

Step 3. In the Interface field, check **WAN1**.

Step 4. In the Service drop-down list, choose [All/~].

Step 5. In the IP field, enter the IP address range.

Note: To limit the bandwidth of your PPTP clients, make sure their LAN IP address is within this range. The LAN IP address was determined in Step 3 of the section *PPTP Server Configuration*.

Step 6. In the Direction drop-down list, choose **Downstream**.

Step 7. In the Min. Rate field, enter the minimum rate of guaranteed bandwidth for the user.

Step 8. In the Max. Rate field, enter the maximum rate of guaranteed bandwidth for the user.

Step 9. Check **Enable** to use this rate control rule.

Step 10. Click **Add to list** to update this rule.

Step 11. To apply the Upstream limit for the range, repeat Step 3 through Step 10 with the Direction drop down list selection as **Upstream**.

Bandwidth Management Type

Type : Rate Control Priority

Interface : WAN1 WAN2

Service : All Traffic [TCP&UDP/1~65535]

IP : 192.168.1.100 to 192.168.1.150

Direction : Upstream

Min. Rate : 256 Kbit/sec

Max. Rate : 380 Kbit/sec

Enable :

All Traffic [TCP&UDP/1~65535]->192.168.1.100~150(Upstream)=>256~380Kbit/sec->WAN1 [Disabled]

Step 12. (Optional) To delete an entry, select the respective entry and click **Delete**.

Step 13. (Optional) To create a new entry, click on **Add New** and re-enter the fields according to your requirements.

Step 14. Click **Save** to save the settings.

Speed with Bandwidth Limitation Enabled

Step 1. Perform another speed test and compare to your initial results to verify that the configuration is working.

Note: The second speed test in our example resulted in download speeds of 1.49 Mb/s to 1.62 Mb/s and upload speeds of 0.20 Mb/s to 0.38 Mb/s. The initial speed test had an upload speed of 1.95 Mb/s and you can see that the bandwidth limit was effective.