

# Bandwidth Management on RV016, RV042, RV042G, and RV082 VPN Routers

## Objective

Bandwidth Management is used to measure and control the communication on a network link which can be used to avoid network congestion.

This article explains how to configure rate control and priority bandwidth management settings on RV016, RV042, RV042G and RV082 VPN Routers.

## Applicable Devices

- RV016
- RV042
- RV042G
- RV082

## Software Version

- v4.2.1.02

## Bandwidth Management

### Maximum Bandwidth Provided by ISP

Step 1. Log in to the Router configuration utility and choose **System Management > Bandwidth Management**. The *Bandwidth Management* page opens:

The screenshot shows the 'Bandwidth Management' configuration page. At the top, it says 'Bandwidth Management' and 'The Maximum Bandwidth Provided by ISP'. Below this is a table with three columns: 'Interface', 'Upstream (Kbit/sec)', and 'Downstream (Kbit/sec)'. The table has two rows: 'WAN1' and 'WAN2', both with '512' in the upstream and downstream fields. Below the table is a section titled 'Bandwidth Management Type'. It has a 'Type:' label with two radio buttons: 'Rate Control' (selected) and 'Priority'. Below that is an 'Interface:' label with two checkboxes: 'WAN1' and 'WAN2'. Below that is a 'Service:' label with a dropdown menu showing 'All Traffic [TCP&UDP/1~65535]'. At the bottom is a 'Service Management' button.

Interface	Upstream (Kbit/sec)	Downstream (Kbit/sec)
WAN1	512	512
WAN2	512	512

**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

The Maximum Bandwidth Provided by ISP		
Interface	Upstream (Kbit/sec)	Downstream (Kbit/sec)
WAN1	615	500
WAN2	578	512

Step 2. Enter the upstream bandwidth in the Upstream field for each one of the WANs. The upstream is the maximum quantity of data that the user can send to the Internet. This is specified by your ISP (Internet Service Provider). The default value is 512 Kbit/sec.

Step 3. Enter the downstream bandwidth in the Downstream field for each one of the WANs. The downstream is the maximum quantity of data that the user can receive from the internet; this is specified by your ISP (Internet Service Provider). The default value is 512 Kbit/sec.

## Rate Control Bandwidth

Choose this option to distinctively control minimum and maximum bandwidth rate for each service and WAN interface.

Step 1. Click Rate Control radio button to manage application bandwidth within the network.

**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

Service Management

IP :  to

Direction : Upstream

Min. Rate :  Kbit/sec

Max. Rate :  Kbit/sec

Enable :

Step 2. Check the Interface check box of the WAN that you would like to apply rate control management.



**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

Service Management

IP : 192.168.1.6 to 192.168.1.56

Direction : Upstream

Min. Rate : Kbit/sec

Max. Rate : Kbit/sec

Enable :

Step 5: Choose the direction that you would like to apply to the interface from the direction drop-down list. There are two possible values:

- Upstream — How fast (speed) the user can send information to the network.
- Downstream — How fast (speed) the user can received information from the network.

**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

Service Management

IP : 192.168.1.6 to 192.168.1.56

Direction : **Upstream**

Min. Rate : Kbit/sec

Max. Rate : Kbit/sec

Enable :

Step 6. Enter the minimum rate that you would like to assign to the interface in the Min. Rate field. The minimum rate is the minimum quantity of data transmitted per second (Kbit/sec)

Step 7. Enter the maximum rate that you would like to assign to the interface in the Max. Rate field. The maximum rate is the maximum quantity of data transmitted per second (Kbit/sec)

Step 8. Check the Enable check box to enable the rate control.

**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

Service Management

IP : 192.168.1.6 to 192.168.1.56

Direction : Upstream ▼

Min. Rate : 512 Kbit/sec

Max. Rate : 512 Kbit/sec

Enable :

Step 9. Click Update, and the configuration will be displayed in the Bandwidth Management Table.

**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

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

Service Management

IP : 192.168.1.6 to 192.168.1.56

Direction : Upstream ▼

Min. Rate : 512 Kbit/sec

Max. Rate : 512 Kbit/sec

Enable :

Update

All Traffic [TCP&UDP/1~65535]->192.168.1.6~56(Upstream)->512~512Kbit/sec->WAN1 [Enabled]

Step 10. Click **Save** to save the bandwidth settings.

## Priority Bandwidth

Choose this option to control upstream and downstream bandwidth by identifying high-priority and low-priority services.

Step 1. Click **Priority** radio button to manage application bandwidth within the network.

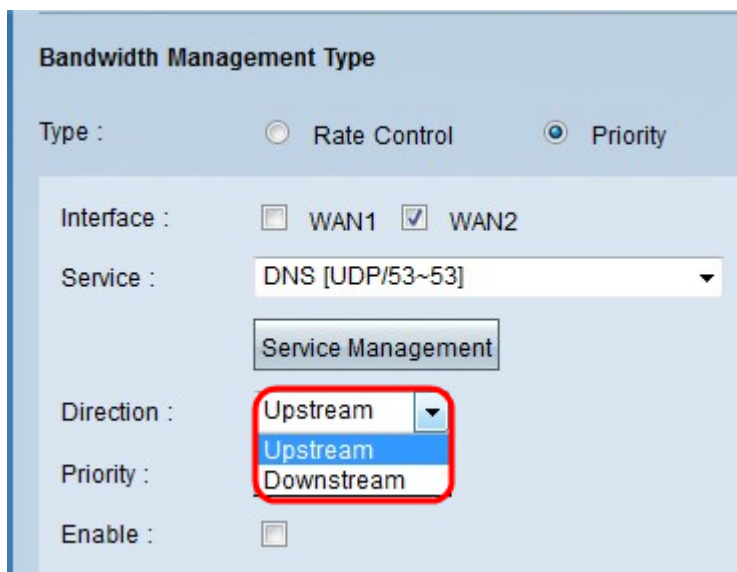
Step 2. Check the **WAN** check box of the interface that you would like to apply priority management.

Step 3. Choose the service that you would like to apply to the rate control from the service drop-down list. A service provides a protocol and ports for the data that it is going to be send or received.

**Note:** If the desired service is unavailable, refer to the [Adding a New Service](#) section to add a new service.

Step 4. Choose the direction that you would like to apply to the rate control from the direction drop-down list. There are two possible values:

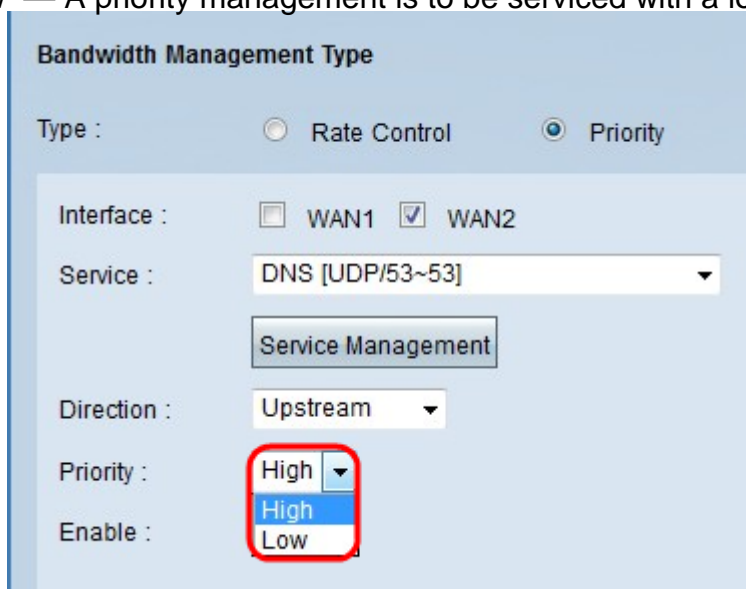
- Upstream — How fast (speed) the user can send information to the network.
- Downstream — How fast (speed) the user can received information from the network.



The screenshot shows the 'Bandwidth Management Type' configuration page. The 'Type' is set to 'Priority'. The 'Interface' section has 'WAN1' unchecked and 'WAN2' checked. The 'Service' dropdown is set to 'DNS [UDP/53~53]'. The 'Direction' dropdown menu is open, showing 'Upstream' selected and 'Downstream' as an option. The 'Priority' field is empty, and the 'Enable' checkbox is unchecked.

Step 5. Choose the priority that you would like to assign to the priority management from the Priority drop-down list. There are two possible values.

- High — A priority management is more likely to be serviced with a high priority.
- Low — A priority management is to be serviced with a low priority.



The screenshot shows the 'Bandwidth Management Type' configuration page. The 'Type' is set to 'Priority'. The 'Interface' section has 'WAN1' unchecked and 'WAN2' checked. The 'Service' dropdown is set to 'DNS [UDP/53~53]'. The 'Direction' dropdown is set to 'Upstream'. The 'Priority' dropdown menu is open, showing 'High' selected and 'Low' as an option. The 'Enable' checkbox is unchecked.

Step 6. Check the check box in the **Enable** field to enable the priority management.



**Bandwidth Management Type**

Type :  Rate Control  Priority

Interface :  WAN1  WAN2

Service : DNS [UDP/53~53]

Service Management

Direction : Upstream

Priority : Low

Enable :

Add to list

DNS [UDP/53~53](Upstream)=>Low=>WAN2 [Enabled]
--

View Save Cancel

Step 7. Click **Add to list** button, and the configuration will be displayed in the Bandwidth Management Table.

Step 8. Click **Save** to save the bandwidth settings.

## [Adding a New Service](#)

Services are used to control the data that it is sent or received. The service establishes a protocol and the ports that the data will use.

Step 1. Click the **Service Management** button. The *Service Management* window appears.

Service Name :

Protocol :

Port Range :  to

DNS [UDP/53~53]

FTP [TCP/21~21]

HTTP [TCP/80~80]

HTTP Secondary [TCP/8080~8080]

HTTPS [TCP/443~443]

HTTPS Secondary [TCP/8443~8443]

TFTP [UDP/69~69]

IMAP [TCP/143~143]

NNTP [TCP/119~119]

POP3 [TCP/110~110]

SNMP [UDP/161~161]

SMTP [TCP/25~25]

Step 2. Enter the name that you would like to assign to the service in the Service Name field.

Service Name :

Protocol :

Port Range :  to

DNS [UDP/53~53]

FTP [TCP/21~21]

HTTP [TCP/80~80]

HTTP Secondary [TCP/8080~8080]

HTTPS [TCP/443~443]

HTTPS Secondary [TCP/8443~8443]

TFTP [UDP/69~69]

IMAP [TCP/143~143]

NNTP [TCP/119~119]

POP3 [TCP/110~110]

SNMP [UDP/161~161]

SMTP [TCP/25~25]

Step 3. Choose the protocol that you would like to assign to the new service from the Protocol drop-down list. There are three possible options.

- TCP — Transmission Control Protocol (TCP) sends traffic consistently and intact but is slower than UDP.
- UDP — User Datagram Protocol (UDP) sends traffic quickly but does not guarantee packet integrity
- IP — Internet protocol is used to manage the delivery or transmission of the data through the Internet.



Service Name :

Protocol : TCP ▼

Port Range : TCP  
UDP  
IP to

DNS [UDP/53~53]

FTP [TCP/21~21]

HTTP [TCP/80~80]

HTTP Secondary [TCP/8080~8080]

HTTPS [TCP/443~443]

HTTPS Secondary [TCP/8443~8443]

TFTP [UDP/69~69]

IMAP [TCP/143~143]

NNTP [TCP/119~119]

POP3 [TCP/110~110]

SNMP [UDP/161~161]

SMTP [TCP/25~25]

Step 4. Enter the range of ports that the new service uses.

Service Name :

Protocol : UDP ▼

Port Range :  to

DNS [UDP/53~53]

FTP [TCP/21~21]

HTTP [TCP/80~80]

HTTP Secondary [TCP/8080~8080]

HTTPS [TCP/443~443]

HTTPS Secondary [TCP/8443~8443]

TFTP [UDP/69~69]

IMAP [TCP/143~143]

NNTP [TCP/119~119]

POP3 [TCP/110~110]

SNMP [UDP/161~161]

SMTP [TCP/25~25]

Step 5. Click Update. The new service will be displayed in the Service Management Table.

Service Name :

Protocol :

Port Range :  to

SMTP [TCP/25~25]  
TELNET [TCP/23~23]  
TELNET Secondary [TCP/8023~8023]  
TELNET SSL [TCP/992~992]  
DHCP [UDP/67~67]  
L2TP [UDP/1701~1701]  
PPTP [TCP/1723~1723]  
IPSec [UDP/500~500]  
ESP [ESP/0~0]  
GRE [GRE/0~0]  
All IP Traffic [ALL/0~0]  
**serviceexp2[UDP/3~7]**

Step 6. Click **OK** to save your settings.

Step 7. (Optional) To update a service, choose the desired service click **Update**, update the fields, and click **OK**.

Step 8. (Optional) To delete the service a service, choose the desired service, click **Delete**, and click **OK**.

**Note:** The default services cannot be deleted or updated.