NETGEAR®

Nighthawk
AC1900 Smart WiFi Router
Model R7000

User Manual

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350 East Plumeria Drive
San Jose, CA 95134
USA

Support

Thank you for selecting NETGEAR products.

After installing your device, locate the serial number on the label of your product and use it to register your product at *https://my.netgear.com*. You must register your product before you can use NETGEAR telephone support. NETGEAR recommends registering your product through the NETGEAR website. For product updates and web support, visit *http://support.netgear.com*.

Phone (US & Canada only): 1-888-NETGEAR.

Phone (Other Countries): Check the list of phone numbers at *http://support.netgear.com/general/contact/default.aspx.*

Trademarks

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The Nighthawk AC1900 Smart WiFi Router Model R7000 delivers combined WiFi connection speeds up to AC1900 WiFi (600 Mbps[1] on 2.4 GHz[2] 802.11n and 1300 Mbps [3]on 5 GHz 802.11ac). Nighthawk is ideal for bandwidth-hungry activities such as online gaming and video streaming, powered by a dual core 1 GHz processor. High-powered amplifiers with antennas provide WiFi coverage anywhere around your home, inside or out.

For gamers, Nighthawk supports upstream Quality of Service (QoS) optimized for online game play with game consoles like Xbox. For uninterrupted HD streaming media, Nighthawk features downstream QoS to identify and prioritize streaming traffic like Netflix, YouTube, and Hulu Plus.

Nighthawk provides fast central storage, backup and streaming to every device in your home with the USB 3.0 port (10 times faster than USB 2.0). Sharing content across your network is easy, whether it's accessing stored photos and music to wirelessly printing. Stream your stored media files anywhere on the network to DLNA screens. Share your music to Airplay-compatible devices from the USB hard-drive connected to the router. Use the free NETGEAR ReadySHARE Vault app to back up your Windows computers to a USB hard drive connected to Nighthawk.

This chapter contains the following sections:

For more information about the topics covered in this manual, visit the support website at *http://support.netgear.com*.

1. Maximum wireless signal rate derived from IEEE standard 802.11 specifications. Actual data throughput and wireless coverage will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate and wireless coverage. NETGEAR makes no express or implied representations or warranties about this product's compatibility with any future standards. 802.11ac 1300 Mbps is approximately 3x faster than 802.11n 450 Mbps.

2. 2.4 GHz performance mode requires 256 QAM support on the WiFi client.

3. Up to 1300 Mbps wireless speeds achieved when you are connecting to other 802.11ac 1300 Mbps devices.

Unpack Your Router

Your package contains the following items.

Nighthawk AC 1900 Smart WiFi Router

Ethernet cable

Power adapter

Figure 1. Package contents

Top and Front Panels

The router has status LEDs on top and a USB 3.0 port on the front.

Figure 2. Router top and front view

Table 1. LED and button descriptions

LED	Description
Power	• **Solid amber**. The router is starting. • **Blinking amber**. The firmware is upgrading, or the Reset button was pressed. • **Solid white**. The router is ready. • **Blinking white**. The firmware is corrupted. • **Off**. Power is not supplied to the router.
Internet	• **Solid white**. The Internet connection is ready. • **Solid amber**. The router has detected an Ethernet cable connection to the modem. • **Off**. No Ethernet cable is connected between the router and the modem.
2.4 GHz Wireless	• **Solid white**. The 2.4 GHz WiFi radio is operating. • **Blinking**. The router is sending or receiving WiFi traffic. • **Off**. The 2.4 GHz WiFi radio is off.
5 GHz Wireless	• **Solid white**. The 5 GHz WiFi radio is operating. • **Blinking**. The router is sending or receiving WiFi traffic. • **Off**. The 5 GHz WiFi radio is off.
USB (1 and 2)	The USB 1 LED is for the USB 3.0 USB port on the front panel. The USB 2 LED is for the USB 2.0 port on the rear panel. • **Solid white**. A USB device is connected and is ready. • **Blinking**. A USB device is plugged in and is trying to connect. • **Off**. No USB device is connected or someone clicked the Safely Remove Hardware button, and it is now safe to remove the attached USB device.

Table 1. LED and button descriptions (Continued)

LED	Description
Ethernet ports 1-4 	The LED color indicates the speed: white for Gigabit Ethernet connections and amber for 100 Mbps or 10 Mbps Ethernet connections. • **Solid**. A powered-on device is connected to the Ethernet port. • **Blinking**. The port is sending or receiving traffic. • **Off**. No device is connected to this Ethernet port.
WiFi On/Off button with LED 	Pressing this button for two seconds turns the 2.4 GHz and 5 GHz WiFi radios on and off. If this LED is lit, the WiFi radios are on. If this LED is off, the WiFi radios are turned off and you cannot use WiFi to connect to the router.
WPS button with LED 	This button lets you use WPS to join the WiFi network without typing the WiFi password. The WPS LED blinks white during this process and then lights solid white.

Rear Panel

The rear panel has the connections and buttons shown in the following figure.

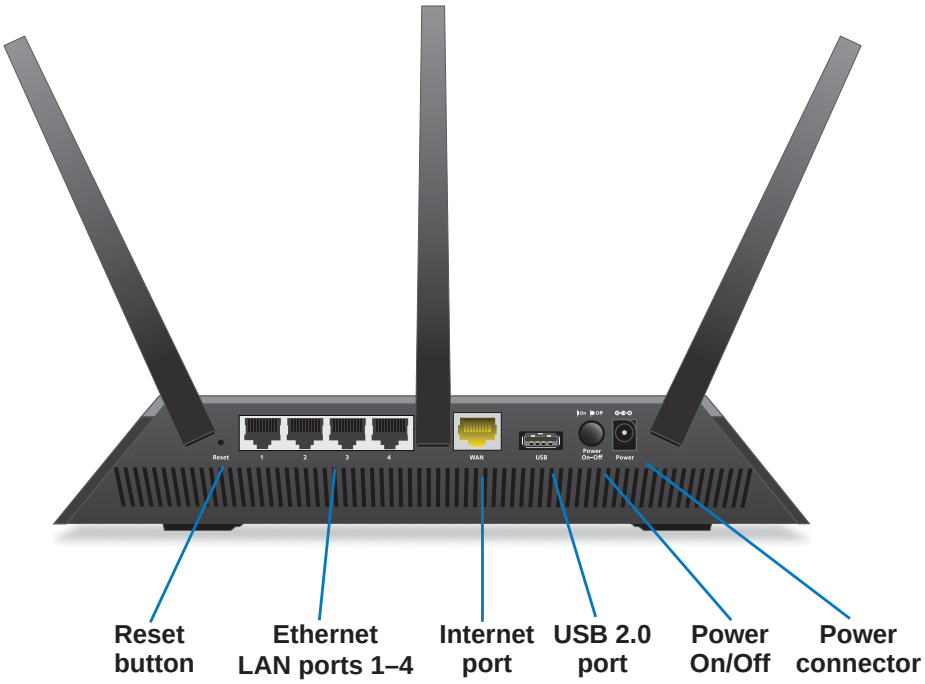

Figure 3. Router rear panel

Pressing the Reset button restores the factory settings. See *Factory Settings* on page 164.

Position Your Router

The router lets you access your network anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal passes through can limit the range.

Additionally, other wireless access points in and around your home might affect your router's signal. Wireless access points are routers, repeaters, WiFi range extenders, or any other device that emits a wireless signal for network access.

➢ **To position your router:**

1. Place your router near the center of the area where your computers and other devices operate, and within line of sight to your wireless devices.
2. Make sure that the router is within reach of an AC power outlet and near Ethernet cables for wired computers.
3. Place the router in an elevated location, minimizing the number walls and ceilings between the router and your other devices.
4. Place the router away from electrical devices such as these:
   - Ceiling fans
   - Home security systems
   - Microwaves
   - Computers
   - Base of a cordless phone
   - 2.4 GHz cordless phone
5. Place the router away from large metal surfaces, large glass surfaces, and insulated walls such as these:
   - Solid metal door
   - Aluminum studs
   - Fish tanks
   - Mirrors
   - Brick
   - Concrete
6. (Optional) If you have adjacent access points, use different radio frequency channels to reduce interference.

Cable Your Router

The following image shows how to cable your router:

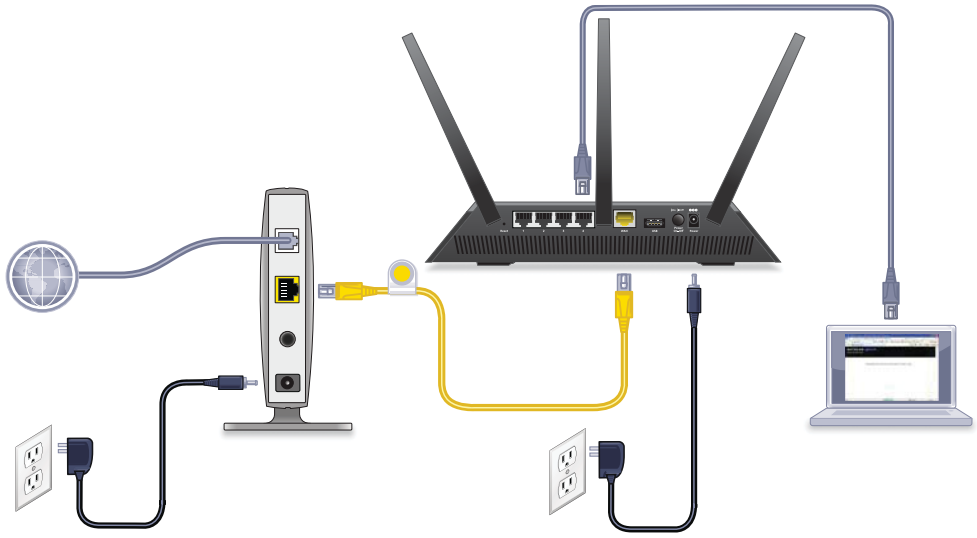

Figure 4. Router cabling

➢ **To cable your router:**

1. Unplug your modem's power, leaving the modem connected to the wall jack for your Internet service.

   If your modem has a battery backup, remove the battery.

2. Plug in and turn on your modem.

   If your modem has a battery backup, replace the battery.

3. Connect your modem to the Internet port of your router with the yellow Ethernet cable that came with your router.
4. Connect the power adapter to your router and plug the power adapter into an outlet.
5. Press the **Power On/Off** button on the rear panel of the router.

Connect to the Network and Access the Router

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This chapter contains the following sections:

Connect to the Network

You can connect to the router's network through a wired or WiFi connection. If you set up your computer to use a static IP address, change the settings so that it uses Dynamic Host Configuration Protocol (DHCP).

Wired Connection

You can connect your computer to the router using an Ethernet cable and join the router's local area network (LAN).

➢ **To connect your computer to the router with an Ethernet cable:**

1. Make sure that the router has power (its Power LED is lit).
2. Connect an Ethernet cable to an Ethernet port on your computer.
3. Connect the other end of the Ethernet cable to one of the numbered Ethernet ports.

   Your computer connects to the local area network (LAN). A message might display on your computer screen to notify you that an Ethernet cable is connected.

WiFi Connection

You can connect to the router's WiFi network with Wi-Fi Protected Setup (WPS) or you can find and select the WiFi network.

➢ **To use WPS to connect to the WiFi network:**

1. Make sure that the router has power (its Power LED is lit).
2. Check the WPS instructions for your computer or wireless device.
3. Press the **WPS** button on the router.
4. Within two minutes, on your computer or WiFi device, press its **WPS** button or follow its instructions for WPS connections.

   Your computer or wireless device connects to the WiFi network.

➢ **To find and select the WiFi network:**

1. Make sure that the router has power (its Power LED is lit).
2. On your computer or wireless device, find and select the WiFi network.

   The WiFi network name is on the router's label.

3. Join the WiFi network and enter the WiFi password.

   The password is on the router's label.

   Your wireless device connects to the WiFi network.

Label

The label on the router shows the login information, MAC address, and serial number.

Figure 5. Router label

Types of Logins

Separate types of logins have different purposes. It is important that you understand the difference so that you know which login to use when.

Types of logins:

- **ISP login**. The login that your ISP gave you logs you in to your Internet service. Your service provider gave you this login information in a letter or some other way. If you cannot find this login information, contact your service provider.
- **WiFi network key or password**. Your router is preset with a unique wireless network name (SSID) and password for wireless access. This information is on the router label.
- **Router login**.This logs you in to the router interface as admin from an Internet browser.

Use an Internet Browser to Access the Router

When you connect to the network (either with WiFi or with an Ethernet cable), you can use an Internet browser to access the router to view or change its settings. The first time you access the router, NETGEAR genie automatically checks to see if your router can connect to your Internet service.

NETGEAR genie Automatic Internet Setup

You can set up your router with the NETGEAR genie automatically, or you can use the genie menus and screens to set up your router manually. Before you start the setup process, get your ISP information and make sure that the computers and devices in the network have the settings described here.

When your Internet service starts, your Internet service provider (ISP) typically gives you all the information needed to connect to the Internet. For DSL service, you might need the following information to set up your router:

- The ISP configuration information for your DSL account
- ISP login name and password
- Fixed or static IP address settings (special deployment by ISP; this setting is rare)

If you cannot locate this information, ask your ISP to provide it. When your Internet connection is working, you no longer need to launch the ISP login program on your computer to access the Internet. When you start an Internet application, your router automatically logs you in.

NETGEAR genie runs on any device with a web browser. Installation and basic setup takes about 15 minutes to complete.

➢ **To use NETGEAR genie to set up your router:**

1. Turn the router on by pressing the **On/Off** button.
2. Make sure that your computer or wireless device is connected to the router with an Ethernet cable (wired) or wirelessly with the preset security settings listed on the label.

   Note: *If you want to change the router's WiFi setting, use a wired connection to avoid being disconnected when the new WiFi settings take effect.*

3. Launch an Internet browser.

   The screen that displays depends on whether you have accessed the router before:

   - The first time you set up the Internet connection for your router, the browser goes to http://www.routerlogin.net, and the NETGEAR genie screen displays.

   - If you already used the NETGEAR genie, type **http://www.routerlogin.net** in the address field for your browser to display the NETGEAR genie screen.

4. Follow the onscreen instructions.

   NETGEAR genie guides you through connecting the router to the Internet.

5. If the browser cannot display the web page, do the following:

- Make sure that the computer is connected to one of the four LAN Ethernet ports or wirelessly to the router.
- Make sure that the router has full power, and that its Power LED is lit white.
- Close and reopen the browser or clear the browser cache.
- Browse to **http://www.routerlogin.net**.
- If the computer is set to a static or fixed IP address (this setting is uncommon), change it to obtain an IP address automatically from the router.

6. If the router does not connect to the Internet, do the following:
   a. Review your settings. Make sure that you selected the correct options and typed everything correctly.
   b. Contact your ISP to verify that you have the correct configuration information.
   c. Read *Chapter 14, Troubleshooting*. If problems persist, register your NETGEAR product and contact NETGEAR technical support.

Log In to the Router

When you first set up your router, NETGEAR genie automatically starts when you launch an Internet browser on a computer that is connected to the router. If you want to view or change settings for the router, you can use genie again.

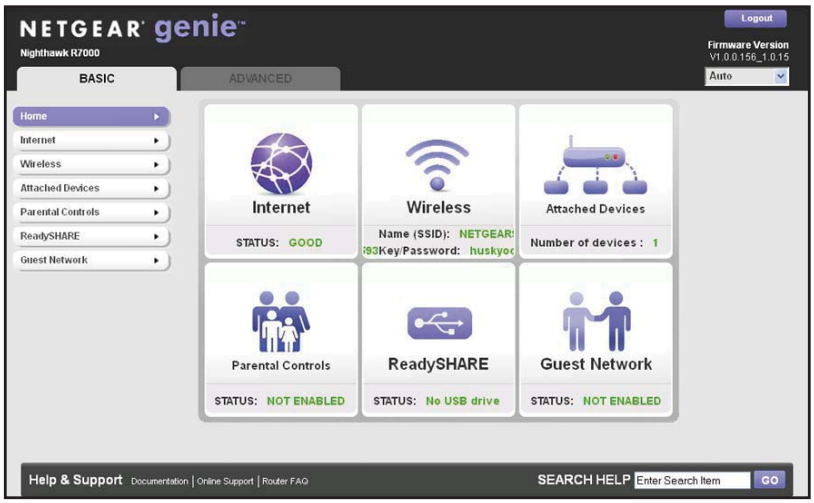
➢ **To log in to the router:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.



Change the Language

By default, the language is set as Auto.

➢ **To change the language:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. In the upper right corner, select a language from the drop-down list.

5. When prompted, click the **OK** button to confirm this change.

   The screen refreshes with the language that you selected.

Access the Router with NETGEAR genie Apps

The genie app is the easy dashboard for managing, monitoring, and repairing your home network. The genie app can help you with the following:

- Automatically repair common wireless network problems.
- Easily manage router features like Live Parental Controls, guest access, Internet traffic meter, speed test, and more.

➢ **To use the genie app to access the router:**

1. Visit the NETGEAR genie web page at *www.NETGEAR.com/genie*.
2. Follow the onscreen instructions to install the app on your smartphone, tablet, or computer.
3. Launch the genie app.

   The genie app dashboard screen displays:

Mobile app

Desktop app

3. Specify Your Internet Settings

Usually, the quickest way to set up the router to use your Internet connection is to allow the genie to detect the Internet connection when you first access the router with an Internet browser. You can also customize or specify your Internet settings.

This chapter contains the following sections:

Use the Internet Setup Wizard

You can use the Setup Wizard to detect your Internet settings and automatically set up your router. The Setup Wizard is not the same as the genie screens that display the first time you connect to your router to set it up.

➢ **To use the Setup Wizard:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup Wizard**.

5. Select the **Yes** radio button.

   If you select No, you are taken to the Internet Setup screen (see *Internet Setup* on page 20).
6. Click the **Next** button.

   The Setup Wizard searches your Internet connection for servers and protocols to determine your ISP configuration.

Manually Set Up the Internet Connection

You can view or change the router's Internet connection settings.

Specify an Internet Connection Without a Login

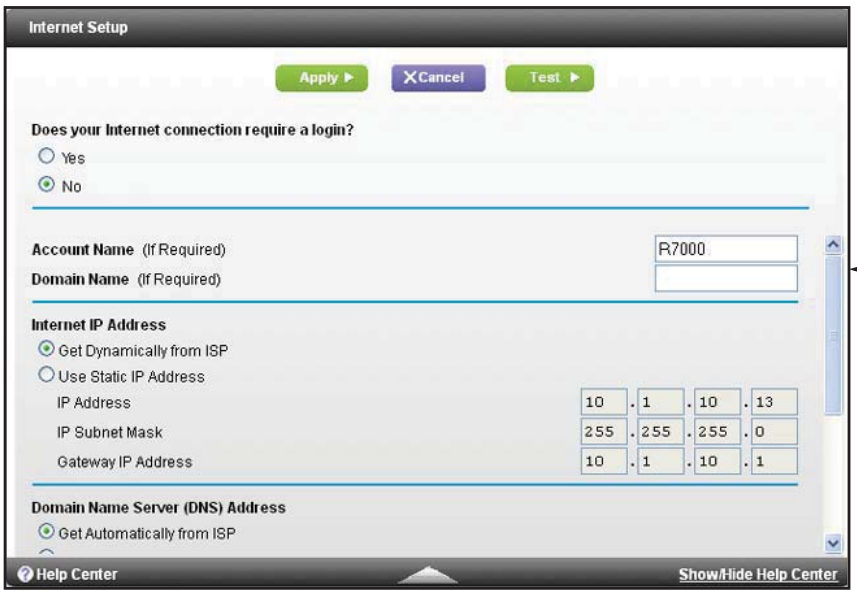
➢ **To specify the Internet connection settings:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **Internet**.



Scroll to view more settings

5. For the **Does your Internet connection require a login** setting, leave the **No** radio button selected.
6. If your Internet connection requires an account name or host name, type it in the **Account Name (If Required)** field.
7. If your Internet connection requires a domain name, type it in the **Domain Name (If Required)** field.

   For the other sections in this screen, the default settings usually work, but you can change them.

8. For the **Internet IP Address** setting, select one of the following radio buttons:
   - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
   - **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.
9. For the **Domain Name Server (DNS) Address** setting, select one of the following radio buttons:
   - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.
   - **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.
10. For the **Router MAC Address** setting, select one of the following radio buttons:
    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.
11. Click the **Apply** button.

    Your settings are saved.
12. Click the **Test** button to test your Internet connection.

    If the NETGEAR website does not display within one minute, see *Chapter 14, Troubleshooting*.

Specify an Internet Connection That Uses a Login

➢ **To view or change the basic Internet setup:**

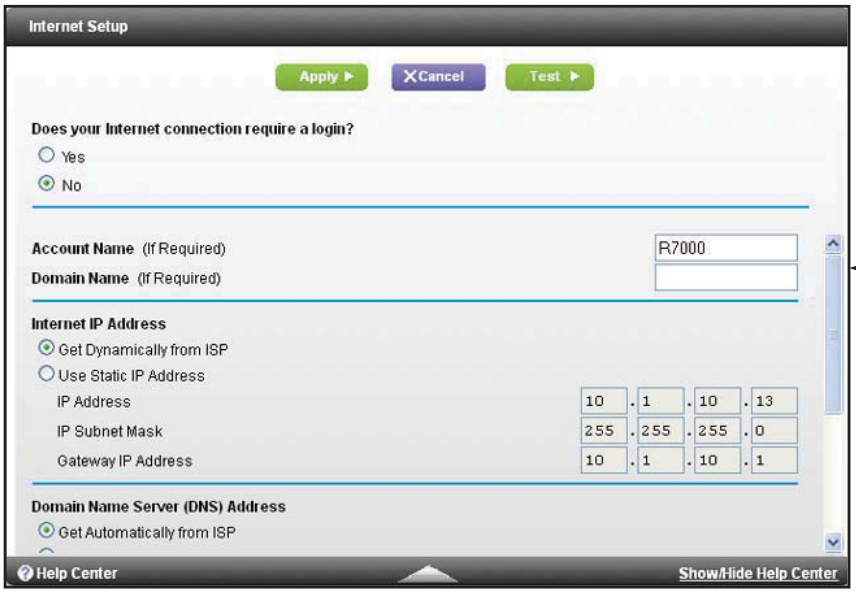
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **Internet**.



5. In the **Does your Internet connection require a login** section of the screen, select the **Yes** radio button.

   The screen adjusts.

6. In the **Internet Service Provider** list, select the encapsulation method **PPPoE**, **PPPoA**, or **L2TP**.
7. In the **Login** field, enter the login name your ISP gave you. This login name is often an email address.
8. In the **Password** field, type the password that you use to log in to your Internet service.
9. If your ISP requires a service name, type it in the **Service Name (if Required)** field.
10. In the **Connection Mode** drop-down list, select **Always On**, **Dial on Demand**, or **Manually Connect**.
11. To change the number of minutes until the Internet login times, out, in the **Idle Timeout (In minutes)** field, type the number of minutes.

    This is how long the router keeps the Internet connection active when no one on the network is using the Internet connection. A value of 0 (zero) means never log out.

12. In the **Internet IP Address** section, select one of the following radio buttons:
    - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
    - **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.
13. In the Domain Name Server (DNS) Address section, select one of the following radio buttons:
    - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.

- **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.

14. In the Router MAC Address section of the screen, select one of the following radio buttons:
    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.
15. Click the **Apply** button.

    Your settings are saved.
16. Click the **Test** button to test your Internet connection.

    If the NETGEAR website does not display within one minute, see *Chapter 14, Troubleshooting*.

Specify IPv6 Internet Connections

You can set up an IPv6 Internet connection if genie does not detect it automatically.

➢ **To set up an IPv6 Internet connection:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**..

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

5. In the **Internet Connection Type** list, select the IPv6 connection type.

   Your Internet service provider (ISP) can provide this information.

- If your ISP did not provide details, you select **IPv6 Tunnel**. If you are not sure, select **Auto Detect** so that the router detects the IPv6 type that is in use. If your Internet connection does not use PPPoE, DHCP, or fixed, but is IPv6, select **Auto Config**. For more information about IPv6 Internet connection, see the following sections.

6. Click the **Apply** button.

   Your changes take effect.

Requirements for Entering IPv6 Addresses

IPv6 addresses are denoted by eight groups of hexadecimal quartets that are separated by colons. You can reduce any four-digit group of zeros within an IPv6 address to a single zero or omit it. The following errors invalidate an IPv6 address:

- More than eight groups of hexadecimal quartets
- More than four hexadecimal characters in a quartet
- More than two colons in a row

Auto Detect

➢ **To set up an IPv6 Internet connection through auto detection:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

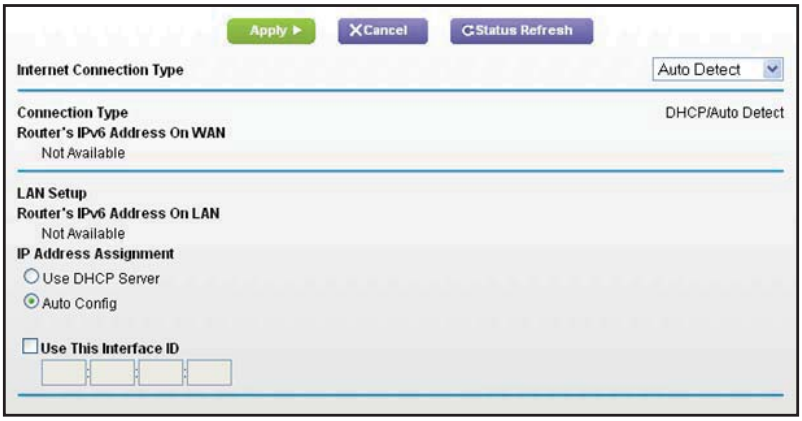
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Auto Detect**.

The screen adjusts:



The router automatically detects the information in the following fields:

- **Connection Type**. This field indicates the connection type that is detected.
- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.
7. (Optional) Select the **Use This Interface ID** check box and specify the interface ID to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
8. Click the **Apply** button.

IPv6 Auto Config

➢ **To set up an IPv6 Internet connection through auto configuration:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.

5. In the **Internet Connection Type** list, select **Auto Config**.

   The screen adjusts:

   The router automatically detects the information in the following fields:

   - **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. (Optional) In the **DHCP User Class (If Required)** field, enter a host name.

   Most people can leave this field blank, but if your ISP has given you a specific host name, enter it here.

7. (Optional) In the **DHCP Domain Name (If Required)** field, enter a domain name.

   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

8. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.
9. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
10. Click the **Apply** button.

IPv6 6to4 Tunnel

The remote relay router is the router to which your router creates a 6to4 tunnel. Make sure that the IPv4 Internet connection is working before you apply the 6to4 tunnel settings for the IPv6 connection.

➢ **To set up an IPv6 Internet connection by using a 6to4 tunnel:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

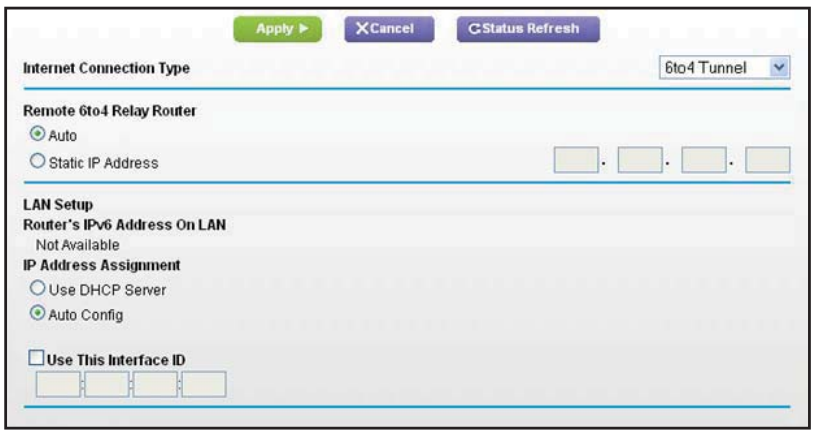
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **6to4 Tunnel**.

The screen adjusts:



The router automatically detects the information in the Router's IPv6 Address on LAN field. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Configure the remote 6to4 relay router settings by selecting one of the following radio buttons:
   - **Auto**. Your router uses any remote relay router that is available on the Internet. This is the default setting.
   - **Static IP Address**. Enter the static IPv4 address of the remote relay router. Your IPv6 ISP usually provides this address.
7. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.
8. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
9. Click the **Apply** button.

IPv6 Pass Through

In pass-through mode, the router works as a Layer 2 Ethernet switch with two ports (LAN and WAN Ethernet ports) for IPv6 packets. The router does not process any IPv6 header packets.

➢ **To set up a pass-through IPv6 Internet connection:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Pass Through**.

   The screen adjusts, but no additional fields display.
6. Click the **Apply** button.

IPv6 Fixed

➢ **To set up a fixed IPv6 Internet connection:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

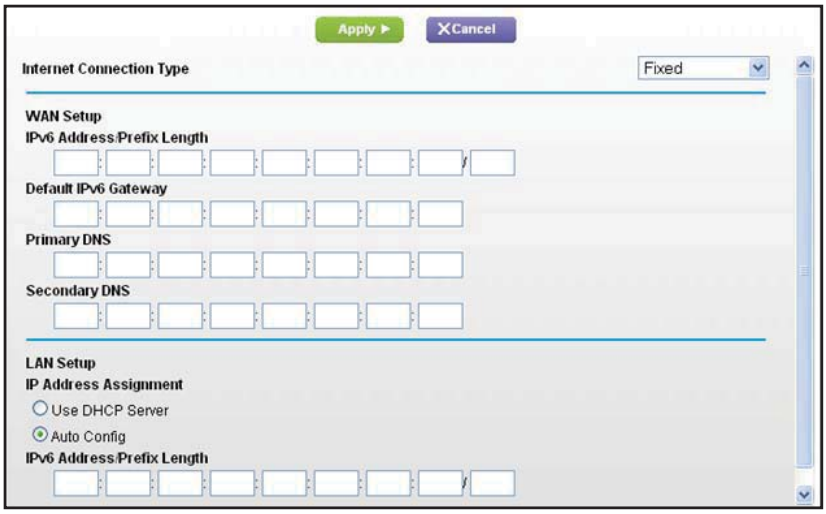
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Fixed**.

The screen adjusts:



6. Configure the fixed IPv6 addresses for the WAN connection:
   - **IPv6 Address/Prefix Length**. The IPv6 address and prefix length of the router WAN interface.
   - **Default IPv6 Gateway**. The IPv6 address of the default IPv6 gateway for the router's WAN interface.
   - **Primary DNS Server**. The primary DNS server that resolves IPv6 domain name records for the router.
   - **Secondary DNS Server**. The secondary DNS server that resolves IPv6 domain name records for the router.

   Note: *If you do not specify the DNS servers, the router uses the DNS servers that are configured for the IPv4 Internet connection on the Internet Setup screen. (See Manually Set Up the Internet Connection on page 23.)*

7. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.
8. In the **IPv6 Address/Prefix Length** fields, specify the static IPv6 address and prefix length of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
9. Click the **Apply** button.

IPv6 DHCP

➢ **To set up an IPv6 Internet connection with a DHCP server:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **DHCP**.

   The screen adjusts:

   The router automatically detects the information in the following fields:

   - **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
6. (Optional) In the **DHCP User Class (If Required)** field, enter a host name.

Most people can leave this field blank, but if your ISP gave you a specific host name, enter it here.

7. (Optional) In the **Domain Name (If Required)** field, enter a domain name.

   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

8. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.
9. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.

10. Click the **Apply** button.

IPv6 PPPoE

➢ **To set up a PPPoE IPv6 Internet connection:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

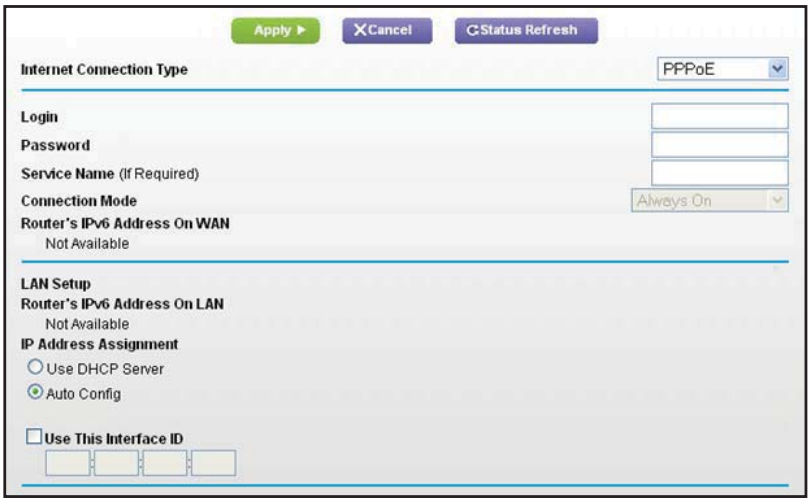
   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.

5. In the **Internet Connection Type** list, select **PPPoE**.

The screen adjusts:



The router automatically detects the information in the following fields:

- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. In the **Login** field, enter the login information for the ISP connection.

   This is usually the name that you use in your email address. For example, if your main mail account is JerAB@ISP.com, you would type JerAB in this field. Some ISPs (like Mindspring, Earthlink, and T-DSL) require that you use your full email address when you log in. If your ISP requires your full email address, type it in this field.

7. In the **Password** field, enter the password for the ISP connection.
8. In the **Service Name** field, enter a service name.

   If your ISP did not provide a service name, leave this field blank.

   Note: *The default setting of the Connection Mode field is Always On to provide a steady IPv6 connection. The router never terminates the connection. If the connection is terminated, for example, when the modem is turned off, the router attempts to reestablish the connection immediately after the PPPoE connection becomes available again.*

9. Specify how the router assigns IPv6 addresses to the devices on your home network (the LAN) by selecting one of the following radio buttons:

- **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
- **Auto Config**. This is the default setting.

10. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

    If you do not specify an ID here, the router generates one automatically from its MAC address.

11. Click the **Apply** button.

Change the MTU Size

The maximum transmission unit (MTU) is the largest data packet a network device transmits. When one network device communicates across the Internet with another, the data packets travel through many devices along the way. If a device in the data path has a lower MTU setting than the other devices, the data packets must be split or "fragmented" to accommodate the device with the smallest MTU.

The best MTU setting for NETGEAR equipment is often the default value. In some situations, changing the value fixes one problem but causes another. Leave the MTU unchanged unless one of these situations occurs:

- You experience problems connecting to your ISP or other Internet service, and the technical support of either the ISP or NETGEAR recommends changing the MTU setting. These web-based applications might require an MTU change:
  - A secure website that does not open, or displays only part of a web page
  - Yahoo email
  - MSN portal
  - America Online's DSL service
- You use VPN and have severe performance problems.
- You used a program to optimize MTU for performance reasons, and now you have connectivity or performance problems.

Note: An incorrect MTU setting can cause Internet communication problems. For example, you might not be able to access certain websites, frames within websites, secure login pages, or FTP or POP servers.

➢ **To change the MTU size:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > WAN Setup**.
5. In the **MTU Size** field, enter a value from 64 to 1500.
6. Click the **Apply** button.

   Your change is saved.

If you suspect an MTU problem, a common solution is to change the MTU to 1400. If you are willing to experiment, you can gradually reduce the MTU from the maximum value of 1500 until the problem goes away. The following table describes common MTU sizes and applications.

Table 2. Common MTU sizes

MTU	Application
1500	The largest Ethernet packet size. This setting is typical for connections that do not use PPPoE or VPN, and is the default value for NETGEAR routers, adapters, and switches.
1492	Used in PPPoE environments.
1472	Maximum size to use for pinging. (Larger packets are fragmented.)
1468	Used in some DHCP environments.
1460	Usable by AOL if you do not have large email attachments, for example.
1436	Used in PPTP environments or with VPN.
1400	Maximum size for AOL DSL.
576	Typical value to connect to dial-up ISPs.

Optimize Performance

4

This chapter contains the following sections:

Prioritize Internet Traffic with Quality of Service

You can use Quality of Service (QoS) to assign high priority to gaming and streaming video from the Internet.

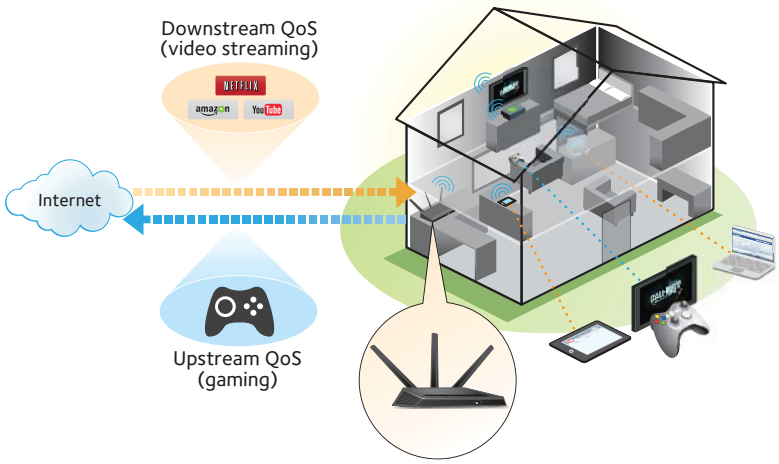


Figure 6. You can prioritize downstream traffic, upstream traffic, or both

Optimize Internet Gaming with Upstream QoS

Upstream Quality of Service (QoS) assigns high priority to Internet traffic from your Xbox gaming system.

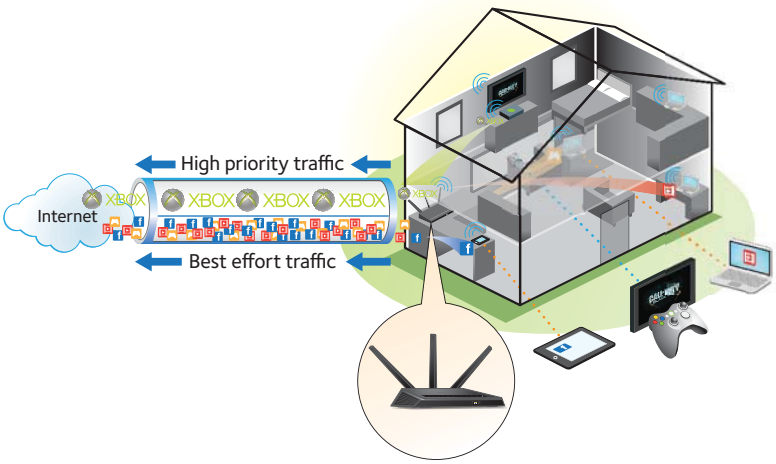


Figure 7. Upstream QoS assigns high priority to gaming traffic from your Xbox

NETGEAR recommends that only gamers enable the Upstream QoS feature. If you do not game and you turn on this feature, some applications might not perform as well as usual.

➢ **To enable upstream QoS:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.

5. Select the **Turn Internet Access QoS On** check box.
6. If you do not know what your uplink bandwidth is, use speedtest.net to find out:
   a. Visit *http://www.speedtest.net/*.
   b. Click the **BEGIN TEST** button.

      Speedtest.net verifies the downstream and upstream speed of your Internet connection. This test is more accurate when your computer has a wired Ethernet connection to the router.

   c. Note the number in the **UPLOAD SPEED** field.
7. Select the **Uplink Bandwidth Maximum** radio button.
8. In the **Uplink bandwidth Maximum** field, type the maximum speed based on your ISP or from the upload results from speedtest.net.
9. Click the **Apply** button.

   The router assigns a high priority to Internet traffic from your gaming devices to the Internet.

Add Upstream QoS Rules

You can give prioritized Internet access to the following types of traffic:

- Specific applications
- Specific online games

- Individual Ethernet LAN ports of the router
- A specific device by MAC address

To specify prioritization of traffic, create a policy for the type of traffic and add the policy to the QoS Policy table in the QoS Setup screen. For convenience, the QoS Policy table lists many common applications and online games that can benefit from QoS handling.

Set Up QoS for Applications and Online Gaming

➢ **To create a QoS policy for applications and online games:**

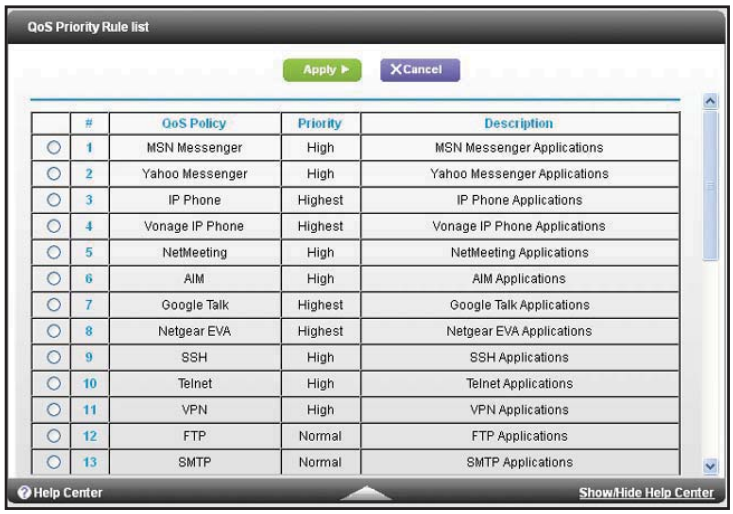
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

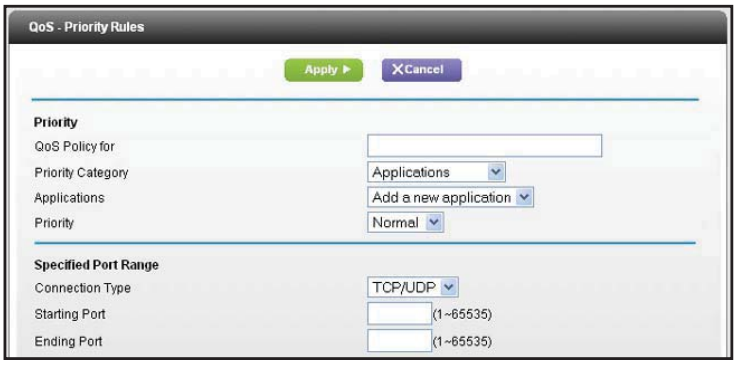
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.
5. Click the **Setup QoS rule** button.

   The QoS Priority Rule list displays.



6. To add a priority rule, scroll down to the bottom of the QoS Setup screen and click the **Add Priority Rule** button.



7. In the **QoS Policy for** field, type the name of the application or game.
8. In the **Priority Category** list, select either **Applications** or **Online Gaming**.

   A list of applications or games displays.
9. Scroll and select **Add a New Application**, or **Add a New Game,** as applicable.
10. If prompted, in the **Connection Type** list, select either **TCP**, **UDP,** or **TCP/UDP** (both). Specify the port number or range of port numbers that the application or game uses.
11. From the **Priority** list, select the priority for Internet access for this traffic relative to other applications and traffic. The options are **Low**, **Normal**, **High**, and **Highest**.
12. Click the **Apply** button.

    The rule is saved.

Set Up QoS for a Router LAN Port

➢ **To create a QoS policy for a device connected to one of the router's LAN ports:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

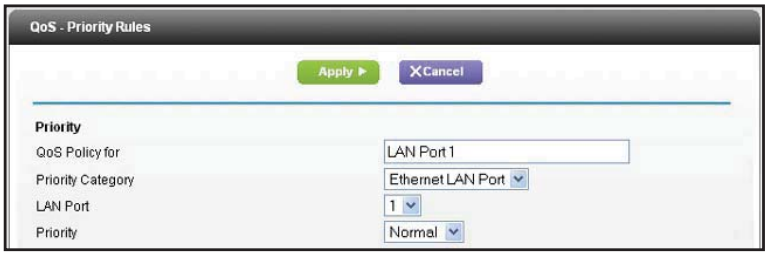
   The BASIC Home screen displays
4. Select **ADVANCED > Setup > QoS Setup**.
5. Select the **Turn Internet Access QoS On** check box.
6. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.
7. Click the **Setup QoS Rule** button.

   The QoS Priority Rule list displays.

8. Scroll down and click the **Add Priority Rule** button.

   The QoS - Priority Rules screen displays.

9. From the **Priority Category** list, select **Ethernet LAN Port**.



10. From the **QoS Policy for** list, select the LAN port.
11. From the **Priority** list, select the priority for Internet access for this port's traffic relative to other applications. The options are **Low**, **Normal**, **High**, and **Highest**.
12. Click the **Apply** button.

    The rule is saved in the QoS Policy list.

Set Up QoS for a MAC Address

➢ **To create a QoS policy for traffic from a specific MAC address:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

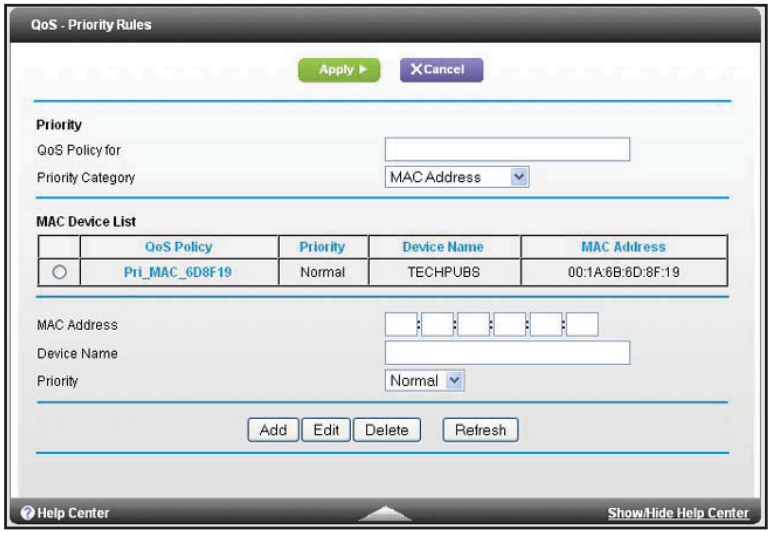
4. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.
5. Click the **Setup QoS Rule** button.

   The QoS Priority Rule list displays.

6. Scroll down and click the **Add Priority Rule** button.

   The QoS - Priority Rules screen displays.

7. From the **Priority Category** list, select **MAC Address**.



8. If the device is in the MAC Device List, select its radio button.

   The information from the MAC Device List populates the policy name, MAC Address, and Device Name fields. If the device is not in the MAC Device List, click the **Refresh** button. If it still does not display, complete these fields.

9. From the **Priority** list, select **Highest**.

   This is the priority for Internet access for this device's traffic relative to other applications and traffic. The options are **Low**, **Normal**, **High**, and **Highest**.

10. Click the **Apply** button.

    This rule is saved.

Edit an Upstream QoS Policy

➢ **To edit a QoS policy:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.
5. Click the **Setup QoS Rule** button.
6. Select the radio button for the QoS policy.

7. Scroll down and click the **Edit** button
8. Change the policy settings.
9. Click the **Apply** button.

   Your changes are saved.

Delete an Upstream QoS Policy

➢ **To delete a QoS policy:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup > Upstream QoS**.
5. Click the **Setup QoS Rule** button.
6. Select the radio button for the QoS policy.
7. Click the **Delete** button.

   The QoS Policy is removed from the list.

Optimize Video Streaming with Downstream QoS

Downstream Quality of Service (QoS) assigns high priority to Internet video streaming from websites like YouTube and Netflix.

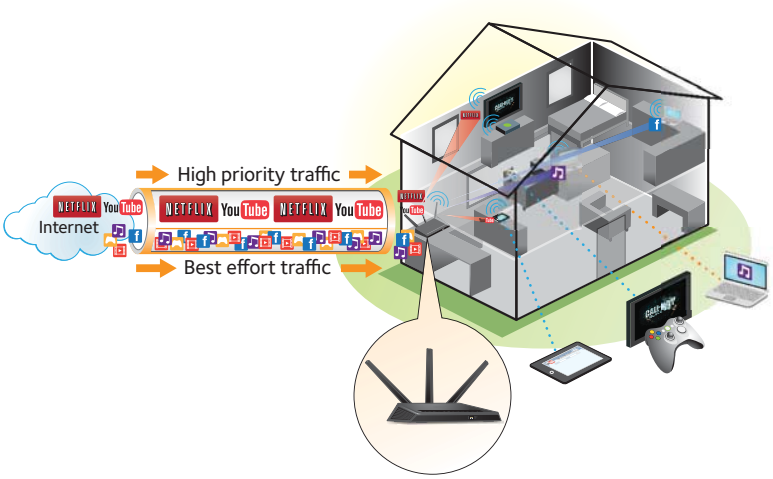


Figure 8. Downstream QoS assigns high priority to video streaming from the Internet

NETGEAR recommends that you enable downstream QoS only if you watch streaming Internet video. When downstream QoS assigns a high priority to streaming video, it also assigns lower priority to the rest of your Internet traffic. That means other tasks like downloading content from the Internet take longer.

➢ **To enable downstream QoS:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > QoS Setup > Downstream QoS**.

5. Select the **Enable Downstream QoS (Improved Video Streaming)** check box.
6. (Optional) Select the **Streaming Database Auto Upgrade** check box.

   The router automatically checks for updates for the streaming database, and downloads and installs them.
7. Click the **Apply** button.

   The router assigns a high priority to video streaming from the Internet traffic.

Add Downstream QoS Rules by Keyword

➢ **To add a downstream QoS rule by keyword:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup > Downstream QoS**.
5. Select the **Enable Downstream QoS (Improved Video Streaming)** check box.
6. In the Add Rules section, leave the **by Keyword** radio button selected.

7. In the **Rule Name** field, type the name of the rule.
8. In the **Keyword** field, type a keyword.
9. Click the **Add** button.

   The rule is added to the QoS rules. The router assigns high priority to Internet traffic from the server that matches the keyword.

Add a Downstream QoS Rule by Device

➢ **To add a downstream QoS rule by keyword:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup > Downstream QoS**.
5. Select the **Enable Downstream QoS (Improved Video Streaming)** check box.
6. In the Add Rules section, select the **by Device** radio button.

   The screen adjusts.
7. In the **MAC Device** list, select a radio button for a device.
8. Click the **Add** button.

   The router assigns high priority to streaming traffic that goes from the Internet to the device you specified.

Improve Network Connections with Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network.

If you use applications such as multiplayer gaming, peer-to-peer connections, or real-time communications such as instant messaging or remote assistance (a feature in Windows XP), enable UPnP.

➢ **To enable Universal Plug and Play:**

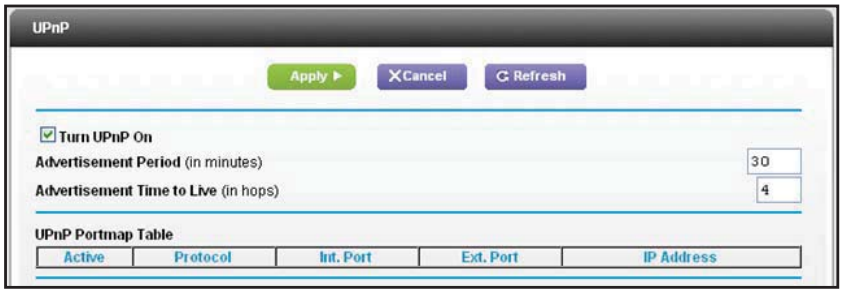
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > UPnP**.

   The UPnP screen displays.



5. Select the **Turn UPnP On** check box.

   By default, this check box is selected. UPnP for automatic device configuration can be enabled or disabled. If the Turn UPnP On check box is cleared, the router does not allow any device to automatically control router resources, such as port forwarding.
6. Type the advertisement period in minutes.

   The advertisement period specifies how often the router broadcasts its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points have current device status at the expense of more network traffic. Longer durations can compromise the freshness of the device status, but can significantly reduce network traffic.
7. Type the advertisement time to live in hops.

   The time to live for the advertisement is measured in hops (steps) for each UPnP packet sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is 4 hops, which should be fine for most home networks. If you notice that some devices are not being updated or reached correctly, it might be necessary to increase this value.
8. Click the **Apply** button.

   The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the router and which ports (internal and external) that device has opened. The UPnP

Portmap Table also displays what type of port is open and whether that port is still active for each IP address.

9. To refresh the information in the UPnP Portmap table, click the **Refresh** button.

Wi-Fi Multimedia Quality of Service

Wi-Fi Multimedia Quality of Service (WMM QoS) prioritizes wireless voice and video traffic over the WiFi link. WMM QoS is automatically enabled for the router.

WMM QoS prioritizes wireless data packets from different applications based on four access categories: voice, video, best effort, and background. For an application to receive the benefits of WMM QoS, both it and the client running that application must have WMM enabled. Legacy applications that do not support WMM and applications that do not require QoS are assigned to the best effort category, which receives a lower priority than voice and video.

➢ **To disable WMM QoS:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.

5. Clear the **Enable WMM (Wi-Fi multimedia) settings (2.4 GHz b/g/n)** check box.
6. Clear the **Enable WMM (Wi-Fi multimedia) settings (5 GHz b/g/n)** check box.
7. Click the **Apply** button.

   Your changes are saved.

Control Access to the Internet

5

The router comes with a built-in firewall that helps protect your home network from unwanted intrusions from the Internet.

This chapter includes the following sections:

Set Up Parental Controls

The first time that you select Parental Controls from the BASIC Home screen, your browser goes to the Live Parental Controls website, where you can learn more about Live Parental Controls and download the application.

➢ **To set up Live Parental Controls:**

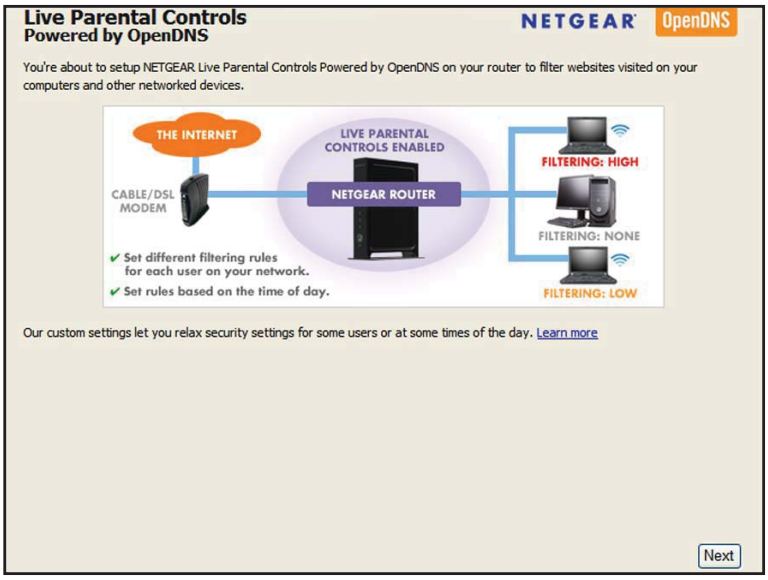
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

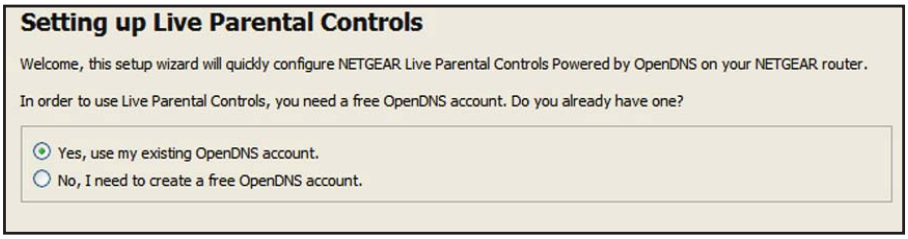
   The BASIC Home screen displays.
4. Select **Parental Controls**.
5. Click either the **Windows Users** or **Mac Users** button.
6. Follow the onscreen instructions to download and install the NETGEAR Live Parental Controls management utility.

After installation, Live Parental Controls automatically starts.



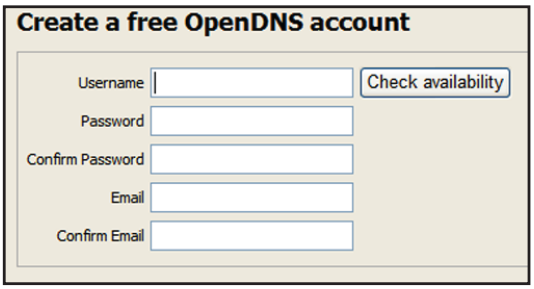
7. Click the **Next** button.
8. Read the note, and click the **Next** button again to proceed.

   Because Live Parental Controls uses free OpenDNS accounts, you are prompted to log in or create a free account.



9. Select the radio button that applies to you:
   - If you already have an OpenDNS account, leave the **Yes** radio button selected.
   - If you do not have an OpenDNS account, select the **No** radio button.
10. Click the **Next** button.

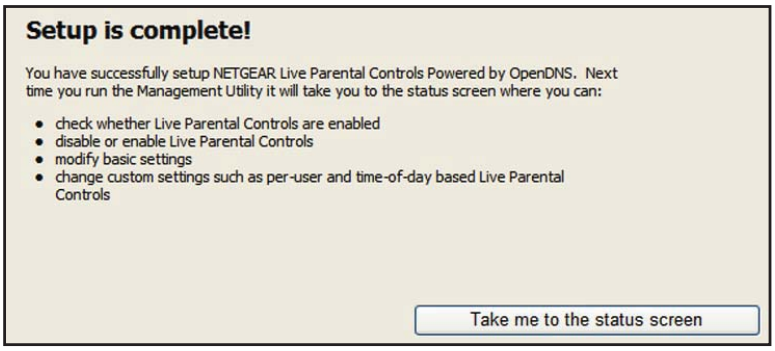
    If you are creating an account, the following screen displays:



11. Complete the fields and click the **Next** button.

    After you log on or create your account, the filtering level screen displays:

12. Select a radio button for a filtering level and click the **Next** button.



13. Click the **Take me to the status screen** button.

Parental controls are now set up for the router. The dashboard shows Parental Controls as Enabled.

Block Access to Your Network

You can use access control to block access to your network.

➢ **To set up access control:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

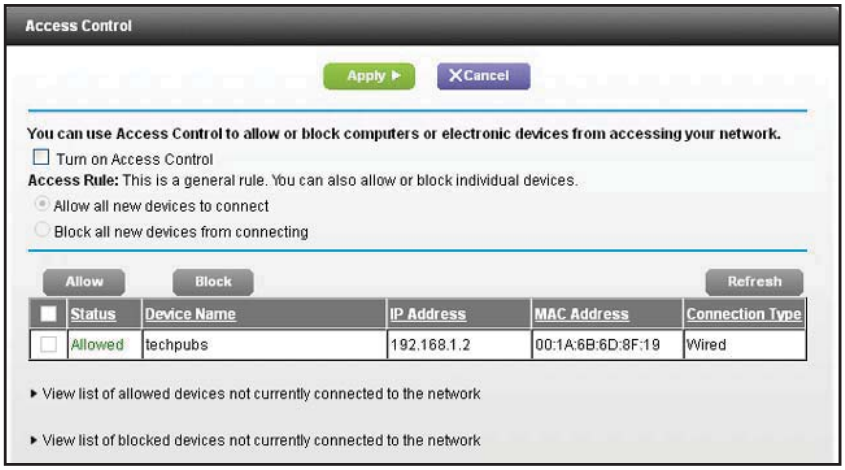
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED > Security > Access Control**.



5. Select the **Turn on Access Control** check box.

   You must select this check box before you can specify an access rule and use the Allow and Block buttons. When this check box is cleared, all devices are allowed to connect, even if the device is in the blocked list.

6. To specify the access rule, select one of the following radio buttons:
   - **Allow all new devices to connect**. With this setting, if you buy a new device, it can access your network. You don't need to enter its MAC address in this screen. NETGEAR recommends that you leave this radio button selected.
   - **Block all new devices from connecting**. With this setting, if you buy a new device, before it can access your network, you must enter its MAC address for an Ethernet connection and its MAC address for a WiFi connection in the allowed list.

   The access rule does not affect previously blocked or allowed devices. It applies only to devices joining your network in the future after you apply these settings.

7. To allow the computer or device you're currently using to continue to access the network, select the check box next to your computer or device, and click the **Allow** button.
8. Click the **Apply** button.

   Your changes take effect.

Use Keywords to Block Internet Sites

You can use keywords to block certain Internet sites from your network. You can use blocking all the time or based on a schedule.

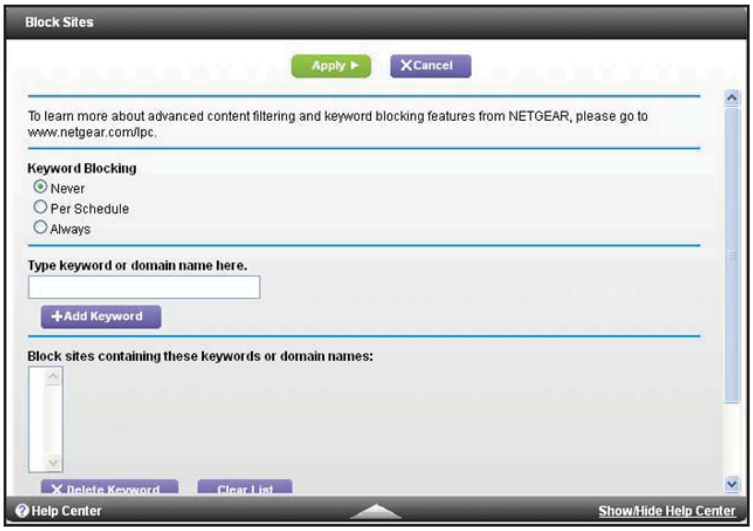
➢ **To set block Internet sites:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Block Sites**.



5. Select one of the keyword blocking options:
   - **Per Schedule**. Turn on keyword blocking according to the Schedule screen settings. (See *Schedule When to Block Internet Sites and Services* on page 60.)
   - **Always**. Turn on keyword blocking all the time, independent of the Schedule screen.
6. In the **Keyword** field, enter a keyword or domain that you want to block.

   For example:
   - Specify XXX to block http://www.badstuff.com/xxx.html.
   - Specify .com if you want to allow only sites with domain suffixes such as .edu or .gov.
   - Enter a period (**.**) to block all Internet browsing access.
7. Click the **Add Keyword** button.

The keyword is added to the keyword list. The keyword list supports up to 32 entries.

8. Click the **Apply** button.

   Keyword blocking takes effect.

➢ **To delete keywords from the list:**

1. Do one of the following:
   - To delete a single word, select it and click the **Delete Keyword** button.

     The keyword is removed from the list.
   - To delete all keywords on the list, click the **Clear List** button.

     All keywords are removed from the list.
2. Click the **Apply** button.

   Your changes are saved.

Block Services from the Internet

You can block Internet services on your network based on the type of service. You can block the services all the time or based on a schedule.

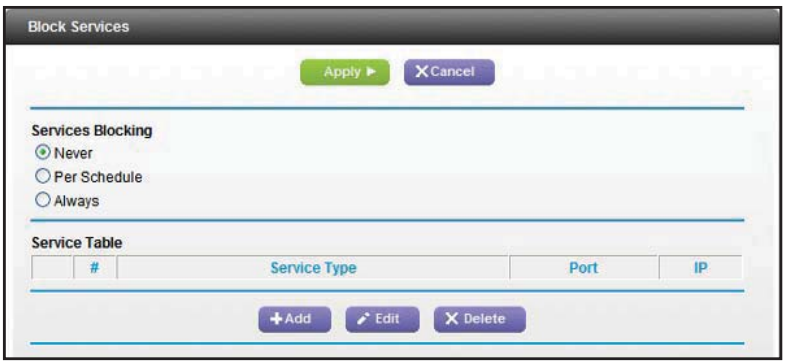
➢ **To block services:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Block Services**.



5. Specify when to block the services:
   - To block the services all the time, select the **Always** radio button.
   - To block the services based on a schedule, select the **Per Schedule** radio button.

     To specify the schedule, see *Schedule When to Block Internet Sites and Services* on page 60.
6. Click the **Add** button.

   The Block Services Setup screen displays:

7. To add a service that is in the **Service Type** list, select the application or service.

   The settings for this service automatically display in the fields.
8. To add a service or application that is not the list, select **User Defined**.
   a. If you know that the application uses either TCP or UDP, select the appropriate protocol; otherwise, select **TCP/UDP** (both).
   b. Enter the starting port and ending port numbers.
      - If the service uses a single port number, enter that number in both fields.
      - To find out which port numbers the service or application uses, you can contact the publisher of the application, ask user groups or newsgroups, or search on the Internet.
9. To specify how to filter the services, select one of the following radio buttons:
   - **Only This IP Address**. Block services for a single computer.
   - **IP Address Range**. Block services for a range of computers with consecutive IP addresses on your network.
   - **All IP Addresses**. Block services for all computers on your network.
10. Click the **Add** button.

    Your changes are saved.

Schedule When to Block Internet Sites and Services

When you schedule blocking, the same schedule is used to block sites and to block services. For information about how to specify what you want the router to block, see *Use Keywords to Block Internet Sites* on page 57 and *Block Services from the Internet* on page 58.

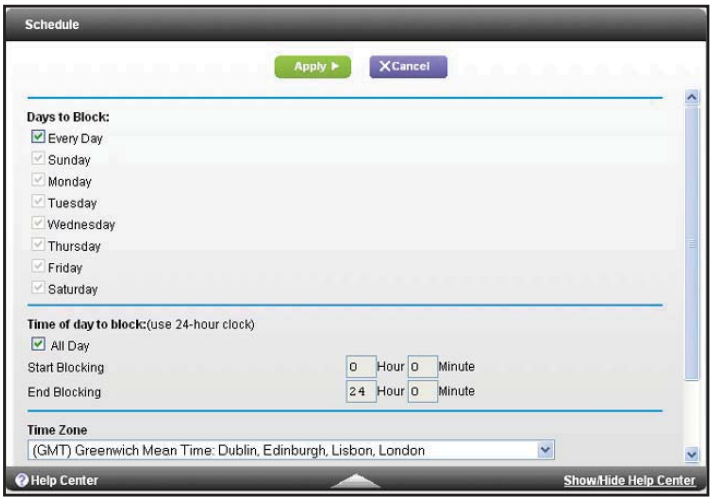
➢ **To schedule blocking:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Schedule**.



5. Specify when to block keywords and services:
   - **Days to Block**. Select the check box for each day that you want to block the keywords or select the **Every Day** check box, which automatically selects the check boxes for all days.
   - **Time of Day to Block**. Select a start and end time in 24-hour format, or select **All Day** for 24-hour blocking.
6. Select your time zone from the list.
7. If you use daylight saving time, select the **Automatically adjust for daylight savings time** check box.
8. Click the **Apply** button.

   Your settings are saved.

Avoid Blocking on a Trusted Computer

You can exempt one trusted computer from blocking. The computer you exempt must have a fixed IP address. You can use the reserved IP address feature to specify the IP address. See *Set Up Address Reservation* on page 84

➢ **To specify a trusted computer:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Block Sites**.
5. Scroll down and select the **Allow trusted IP address to visit blocked sites** check box.
6. In the **Trusted IP Address** field, enter the IP address of the trusted computer.
7. Click the **Apply** button.

   Your changes are saved.

Set Up Security Event Email Notifications

The router can email you its logs of router activity. The log records router activity and security events such as attempts to access blocked sites or services.

➢ **To set up email notifications:**

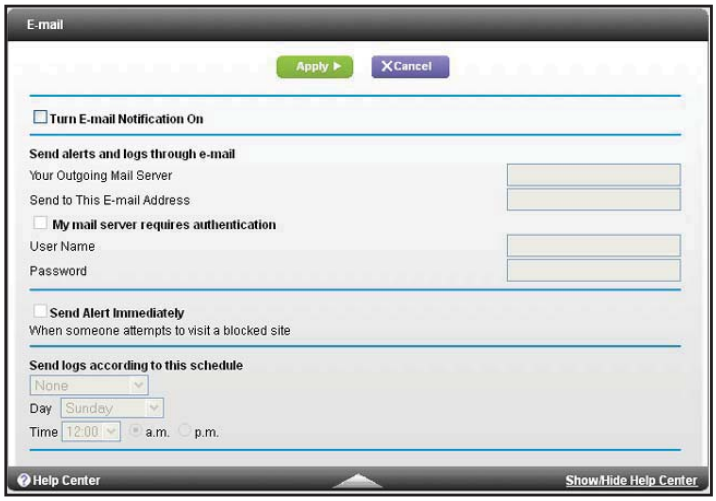
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Security > E-mail**.



5. Select the **Turn Email Notification On** check box.
6. In the **Your Outgoing Mail Server** field, enter the name of your ISP outgoing (SMTP) mail server (such as mail.myISP.com).

   You might be able to find this information in the configuration screen of your email program. If you leave this field blank, log and alert messages are not sent.
7. Enter the email address to which logs and alerts are sent in the **Send to This E-mail Address** field.

   This email address is also used for the **From** address. If this field is blank, log and alert messages are not sent.
8. If your outgoing email server requires authentication, select the **My Mail Server requires authentication** check box.
   a. In the **User Name** field, type the user name for the outgoing email server.
   b. In the **Password** field, type the password for the outgoing email server.
9. (Optional) Select the **Send Alerts Immediately** check box.

   Email alerts are sent immediately when someone attempts to visit a blocked site.
10. To send logs based on a schedule, specify these settings:
    - From **Send logs according to this schedule** drop-down list, select the schedule type.
    - From the **Day** drop-down list, select the day.
    - From the **Time** drop-down list, select the time, and select the **am** or **pm** radio button.
11. Click the **Apply** button.

    Your settings are saved.

    Logs are sent automatically. If the log fills up before the specified time, it is sent. After the log is sent, it is cleared from the router memory. If the router cannot email the log and the log buffer fills up, the router overwrites the log.

Share USB Drives Attached to the Router

6

This chapter describes how to access and configure a USB storage drive attached to your router. The USB port on the router can be used only to connect USB storage devices like flash drives or hard drives, or a printer. Do not connect computers, USB modems, CD drives, or DVD drives to the router USB port.

This chapter contains the following sections:

For more information about ReadySHARE features, visit *www.netgear.com/readyshare*.

USB Drive Requirements

The router works with most USB-compliant external flash and hard drives. For the most up-to-date list of USB drives that the router supports, visit *http://kbserver.netgear.com/readyshare*.

Some USB external hard drives and flash drives require you to load the drivers onto the computer before the computer can access the USB device. Such USB devices do not work with the router.

The router supports the following file system types for full read/write access:

- FAT16, FAT32
- NTFS
- NTFS with compression format enabled
- Ext2, Ext3, Ext4
- XFS
- HFS
- HFS+

Access a USB Drive on the Network

ReadySHARE lets you access and share a USB drive connected to the router USB port. (If your USB drive has special drivers, it is not compatible.)

Figure 9. The blue USB 3.0 port on the front of the router provides the fastest access

➢ **To connect a USB drive:**

1. Insert your USB storage drive into the blue USB 3.0 port on the front of the router.

2. If your USB drive has a power supply, you must use it when you connect the USB drive to the router.

   When you connect the USB drive to the router USB port, it might take up to two minutes before it is ready for sharing. By default, the USB drive is available to all computers on your local area network (LAN).

- **To access the USB drive from a Mac:**

1. Select **Go > Connect to Server**.
2. Enter **smb://readyshare** as the server address.
3. Click the **Connect** button.

- **To access the USB drive from a Windows computer:**

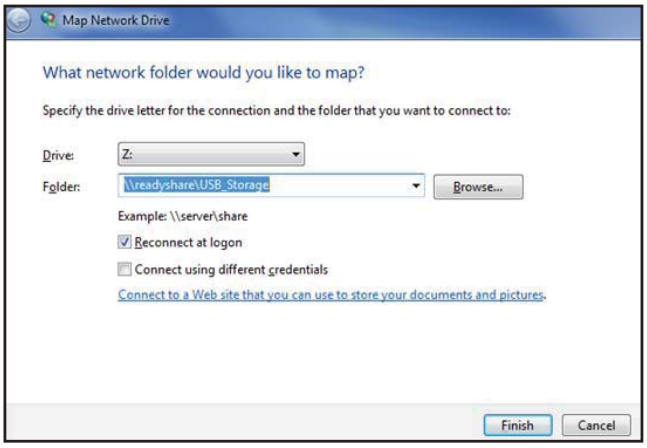
1. Select **Start > Run**.
2. Enter **\\readyshare** in the dialog box and click the **OK** button.

- **To map the USB device to a Windows network drive:**

1. Visit *www.netgear.com/readyshare.*
2. In the ReadySHARE USB Storage Access pane, click **PC Utility**.

   The `readyshareconnect.exe` file is downloaded to your computer.

3. Launch `readyshareconnect.exe`.



4. Select the drive letter to map to the network folder.
5. (Optional) If you want to connect to the USB drive as a different user, select the **Connect using different credentials** check box.
   a. Type the user name and password.
   b. Click the **OK** button.
6. Click the **Finish** button.

   The USB drive is mapped to the drive letter that you specified.

Back Up Windows Computers with ReadySHARE Vault

Your router comes with free backup software for all the Windows computers in your home. Connect a USB hard disk drive (HDD) to the USB port on your router for centralized, continuous, and automatic backup.

➢ **To back up your Windows computer:**

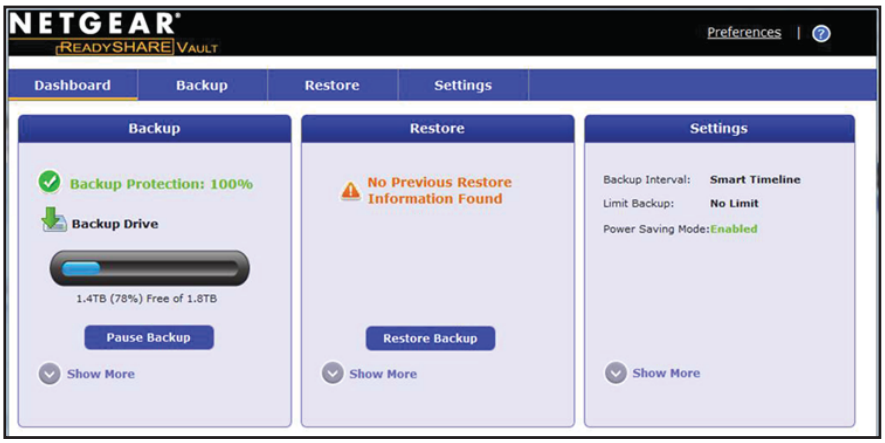
1. Connect a USB HDD to a USB port on the router.

   For best performance, connect a USB 3.0 HDD to the blue USB 3.0 port on the front of the router.

2. Install the genie app on each Windows computer.

   To download the genie app, visit *www.netgear.com/genie*.

3. Download ReadySHARE Vault from *www.netgear.com/readyshare* and install it on each Windows computer.
4. Launch ReadySHARE Vault.



5. Use the dashboard or the Backup tab to set up and run your backup.

Control Access to the USB Drive

You can specify the device name, workgroups, and network folders for your USB device.

➢ **To specify the USB access settings:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

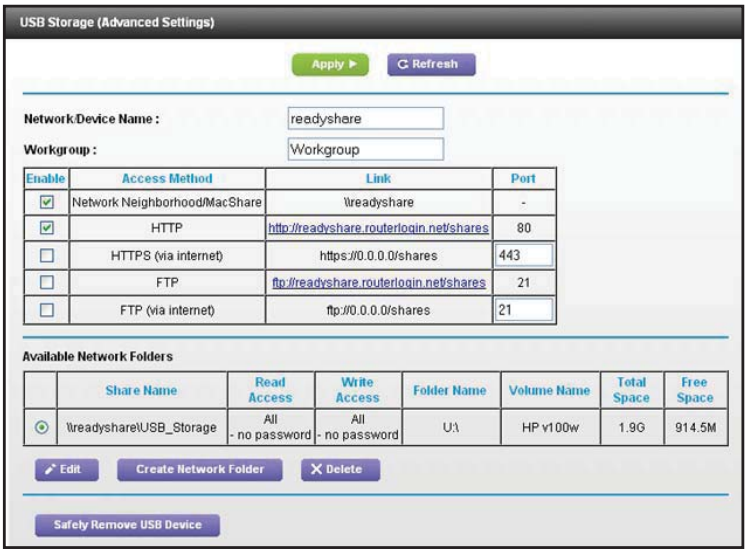
   A login screen displays.

3. Enter the router user name and password.

The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED > USB Storage > Advanced Settings**.



5. Specify access to the USB storage device:
   - **Network Device Name**. This is the name used to access the USB device connected to the router. The default is readyshare.
   - **Workgroup**. If you are using a Windows workgroup rather than a domain, the workgroup name is displayed here. The name works only in an operating system that supports NetBIOS, such as Microsoft Windows.
   - **Access Method**. Select the check boxes for the access methods that you want:
     - **Network Neighborhood/MacShare**. Enabled by default.
     - **HTTP**. Enabled by default. You can type **http://readyshare.routerlogin.net/shares** to access the USB drive.
     - **HTTP (via Internet)**. Disabled by default. If you enable this feature, remote users can type http://*<public IP address/shares>* (for example, http://1.1.10.102/shares) or a URL domain name to access the USB drive over the Internet. This feature supports file uploading only.
     - **FTP**. Disabled by default.
     - **FTP (via Internet)**. Disabled by default. If you select this check box, remote users can access the USB drive through FTP over the Internet. This feature supports both downloading and uploading of files.
6. If you changed the settings, click the **Apply** button.

   Your changes are saved.

Use FTP Within the Network

File Transfer Protocol (FTP) lets you send and receive large files faster.

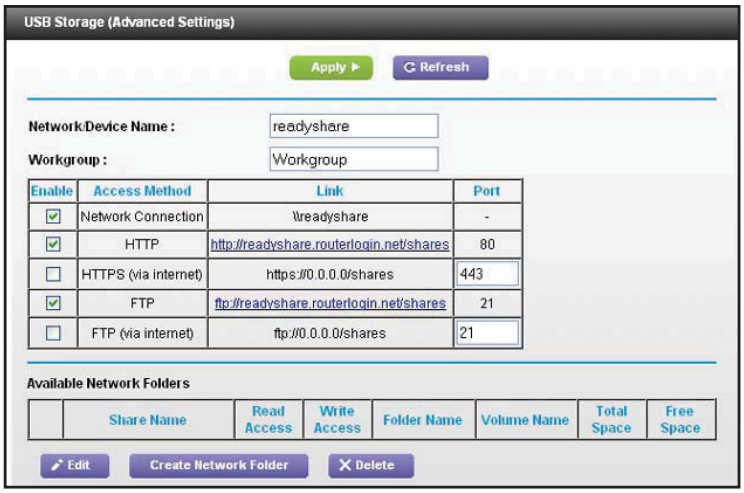
➢ **To set up FTP access:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.



5. Select the **FTP** check box.
6. Click the **Apply** button.

   Your changes are saved.

Manage Network Folders on a USB Drive

You can view or change the network folders on the USB storage device.

View Network Folders on a USB Drive

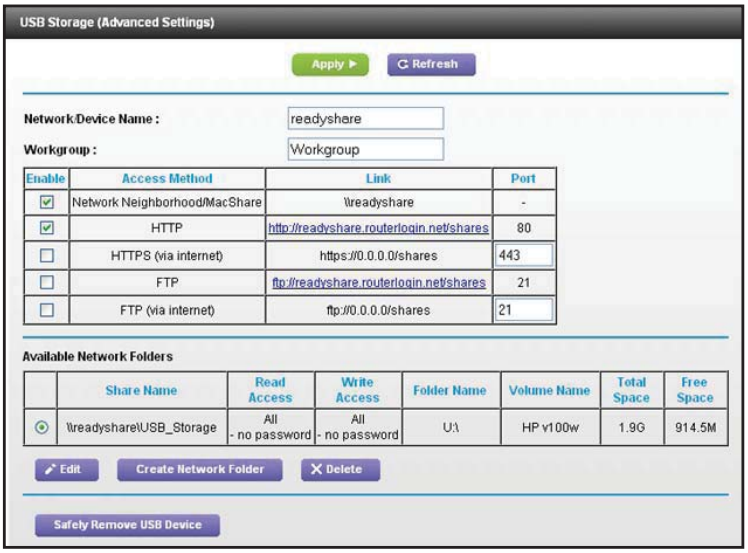
➢ **To view network folders:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.



5. Scroll down to the Available Networks Folder section of the screen, and adjust the following settings:
   - **Share Name**. If only one device is connected, the default share name is USB_Storage. (Some router models have more than one USB port.)

     You can click the name, or you can type it in the address field of your web browser. If Not Shared is shown, the default share has been deleted, and no other share for the root folder exists. Click the link to change this setting.

- **Read Access and Write Access**. Show the permissions and access controls on the network folder. All–no password (the default) allows all users to access the network folder. The password for admin is the same one that you use to log in to the router.
- **Folder Name**. Full path of the network folder.
- **Volume Name**. Volume name from the storage device (either USB drive or HDD).
- **Total Space and Free Space**. Show the current utilization of the storage device.

Add a Network Folder on a USB Drive

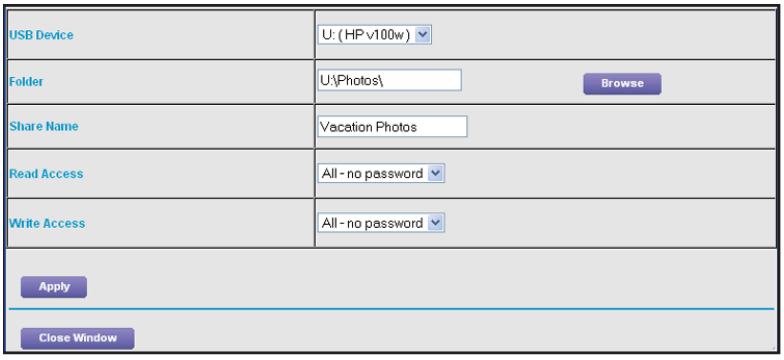
➢ **To add a network folder:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > ReadySHARE**.
5. Click the **Edit** button.
6. Click the **Create Network Folder** button.



   If this screen does not display, your web browser might be blocking pop-ups. If it is, change the browser settings to allow pop-ups.
7. In the **USB Device list**, select the USB drive.
8. Click the **Browse** button and in the **Folder** field, select the folder.
9. In the **Share Name** field, type the name of the share.
10. In the **Read Access** list and the **Write Access** list, select the settings that you want.

    The user name (account name) for All–no password is guest. The password for admin is the same one that is used to log in to the router. By default, it is password.

11. Click the **Apply** button.

    The folder is added on the USB device.

Edit a Network Folder on a USB Drive

➢ **To edit a network folder:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > ReadySHARE**.
5. Click the **Edit** button.

   The Edit Network Folder screen displays the same settings shown in the Add a Network Folder screen.
6. Change the settings in the fields as needed.
7. Click the **Apply** button.

   Your changes are saved.

Approve USB Devices

For more security, you can set up the router to share only USB devices that you approve.

➢ **To approve USB devices:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

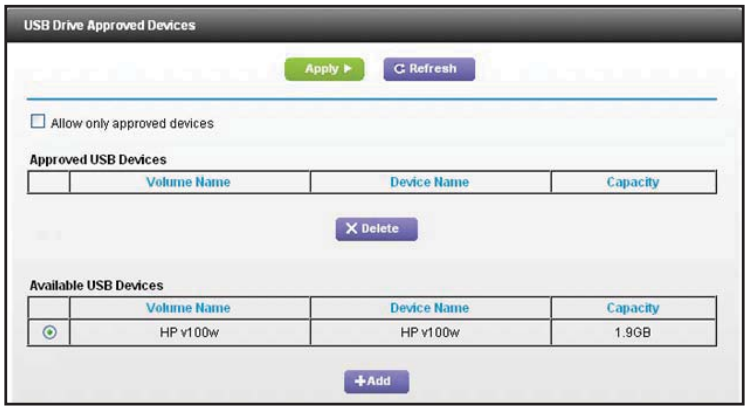
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > USB Settings**.

   By default the **Enable any USB Device connection to the USB port** radio button is selected. This setting lets you connect and access all your USB drives.

5. Select the **No** radio button.
6. Click the **Approved Devices** button.



   The approved and available USB devices display.

7. In the **Available USB Devices** list, select the drive that you want to approve.
8. Click the **Add** button.
9. Select the **Allow only approved devices** check box.
10. Click the **Apply** button.

    Your change takes effect.

11. To work with another USB device, first click the **Safely Remove USB Device** button for the currently connected USB device. Connect the other USB device, and repeat this process.

Safely Remove a USB Drive

Before you physically disconnect a USB drive from the router USB port, log in to the router and take the drive offline.

➢ **To remove a USB disk drive safely:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **USB Storage > Basic Settings**.
5. Click the **Safely Remove USB Device** button.

   This takes the drive offline.

6. Physically disconnect the USB drive.

Access the Router's USB Drive Through the Internet

7

With Dynamic DNS, you can use the Internet to access a USB hard drive attached to the router's USB port router when you're not home. This chapter includes the following sections:

- *Access the USB Drive Through the Internet*
- *Dynamic DNS*
- *Your Personal FTP Server*
- *Set Up Your Personal FTP Server*

For information about how to connect the USB drive and to specify its settings, see *Chapter 6, Share USB Drives Attached to the Router*.

Access the USB Drive Through the Internet

You can access the USB drive through the Internet when you're not home.

➢ **To access the USB drive from a remote computer:**

1. Launch a web browser on a computer that is not on your home network.
2. Connect to your home router:
   - To connect with Dynamic DNS, type the DNS name.

     To use a Dynamic DNS account, you must enter the account information in the Dynamic DNS screen. See *Dynamic DNS* on page 77.
   - To connect without Dynamic DNS, type the router's Internet port IP address.

   You can view the router's Internet IP address on the BASIC Home screen.

You can use FTP to share files on a USB drive connected to the router.

Set Up FTP Access Through the Internet

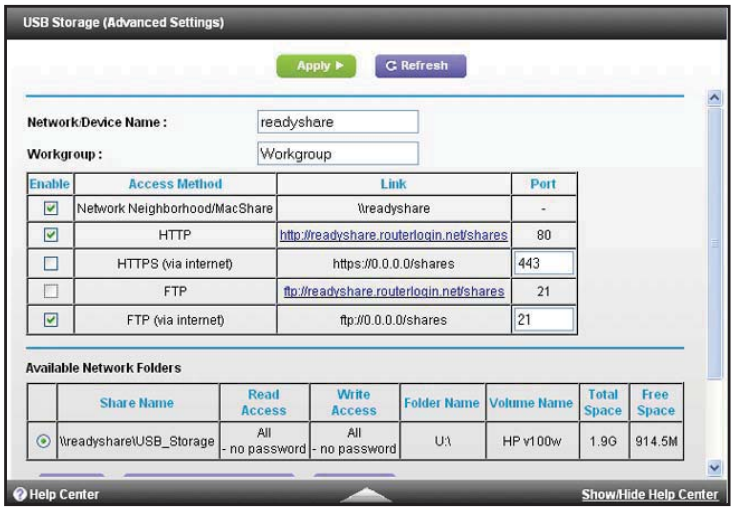
➢ **To set up FTP access:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

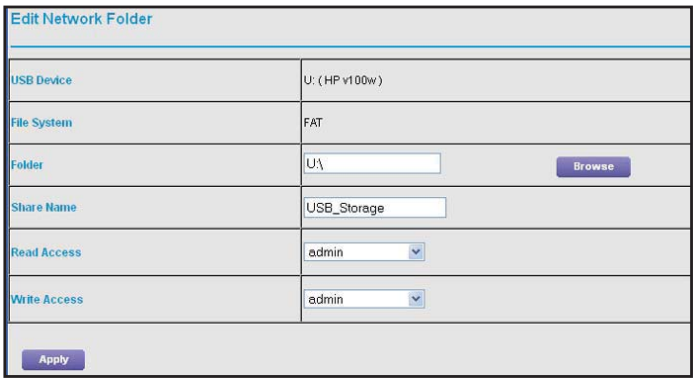
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.



5. Select the **FTP (via Internet)** check box.
6. Click the **Apply** button.

   Your changes are saved.
7. To limit access to the admin user, click the **Edit** button.



8. In the **Read Access** list, select **admin**.
9. In the **Write Access** list, select **admin**.
10. Click the **Apply** button.

    Your changes are saved.

Access the USB Drive Through the Internet with FTP

You must first set up FTP via Internet access as described in the previous section.

➢ **To access the USB drive with FTP from a remote computer:**

1. To download, launch an Internet browser.
2. To upload, use an FTP client such as filezilla.
3. Type **ftp://** and the Internet port IP address in the address field of the browser.

   For example, type **ftp://10.1.65.4**.

   If you are using Dynamic DNS, type the DNS name.

   For example, type **ftp://MyName.mynetgear.com**.
4. When prompted, log in:.
   - To log in as admin, in the user name field, type **admin** and in the password field, type the same password that you use to log in to the router.
   - To log in as guest, in the user name field, enter **guest**.

     The guest user name does not have a password. To restrict access to the USB drive, you can specify that only the admin user can access it. See *Control Access to the USB Drive* on page 66.

   The files and folders of the USB drive that your account has access to display. For example, you might see `share/partition1/directory1`.

Dynamic DNS

Internet service providers (ISPs) assign numbers called IP addresses to identify each Internet account. Most ISPs use dynamically assigned IP addresses. This means that the IP address can change at any time. You can use the IP address to access your network remotely, but most people don't know what their IP addresses are or when this number changes.

To make it easier to connect, you can get a free account with a Dynamic DNS service that lets you use a domain name to access your home network. To use this account, you must set up the router to use Dynamic DNS. Then the router notifies the Dynamic DNS service provider whenever its IP address changes. When you access your Dynamic DNS account, the service finds the current IP address of your home network and automatically connects you.

If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), the Dynamic DNS service does not work because private addresses are not routed on the Internet.

Your Personal FTP Server

With your customized free URL, you can use FTP to access your network when you aren't home through Dynamic DNS. To set up your FTP server, you must register for a free NETGEAR Dynamic DNS (DDNS) service account and specify the account settings in the router's Dynamic DNS screen.

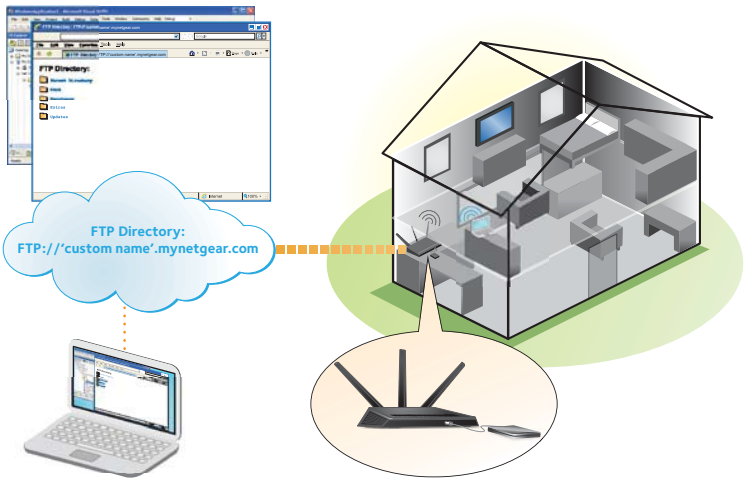


Figure 10. You can access your network through the Internet when you;re not home

Note: The router supports only basic DDNS, and the login and password might not be secure. You can use DDNS with a VPN tunnel for a secure connection.

Set Up a New Dynamic DNS Account

➢ **To set up Dynamic DNS and register for a free NETGEAR account:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Settings > Dynamic DNS**.

5. Select the **Use a Dynamic DNS Service** check box.
6. In the **Service Provider** list, select **NETGEAR**.
7. Select the **No** radio button.
8. In the **Host Name** field, type the name that you want to use for your URL.

   The host name is sometimes called the domain name. Your free URL includes the host name that you specify, and ends with mynetgear.com. For example, specify *MyName.mynetgear.com*.
9. In the **Email** field, type the email address that you want to use for your account.
10. In the **Password (6-32 characters)** field, type the password for your account.
11. Click the **Register** button.
12. Follow the onscreen instructions to register for your NETGEAR Dynamic DNS service.
13. To check that Dynamic DNS is enabled in the router, click the **Show Status** button.

    A message displays the Dynamic DNS status.