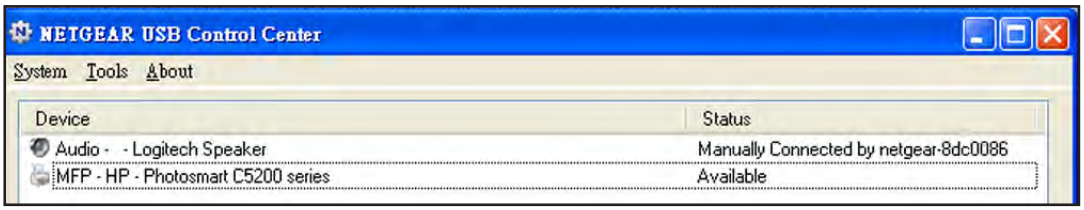
Change NETGEAR USB Control Center Settings

You can stop the NETGEAR USB Control Center from starting automatically when you log in to Windows. You can also change the language and specify the time-out to release the printer connection.

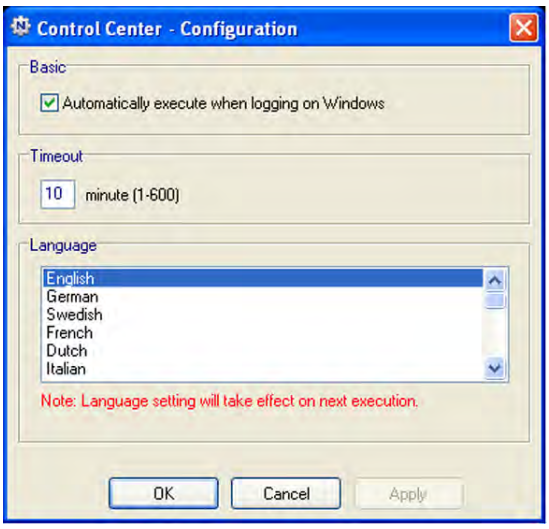
➢ **To turn off automatic NETGEAR USB Control Center startup:**

1. Click the **NETGEAR USB Control Center** icon .

   The main screen displays.



2. Select **Tools > Configuration**.



3. Clear the **Automatically execute when logging on Windows** check box.
4. Click the **OK** button.

   Your change is saved.

➢ **To change the language:**

1. Select **Tools > Configuration**.
2. In the **Language** list, select a language.
3. Click the **OK** button.

   The next time NETGEAR USB Control Center starts, the language changes.

➢ **To specify the time-out:**

1. Select **Tools > Configuration**.
2. In the **Timeout** field, type the number of minutes.

   The time-out is the number of minutes that a computer holds its connection to the printer when the connection isn't being used.
3. Click the **OK** button.

   Your change is saved.

Specify Network Settings

10

The router comes ready for WiFi, Ethernet, and USB connections. You can customize the router's network settings. NETGEAR recommends that you install the router and connect it to the Internet before you change its network settings.

This chapter includes the following sections:

- *Disable LED Blinking or Turn Off LEDs*
- *View WAN Settings*
- *Set Up a Default DMZ Server*
- *Change the Router's Device Name*
- *Change the LAN TCP/IP Settings*
- *Specify the IP Addresses That the Router Assigns*
- *Disable the DHCP Server Feature in the Router*
- *Reserve LAN IP Addresses*
- *Use the WPS Wizard for WiFi Connections*
- *Specify Basic WiFi Settings*
- *Change the WiFi Security Option*
- *Set Up a Guest Network*
- *How the Router Manages Wireless Clients*
- *Control the Wireless Radios*
- *Set Up a Wireless Schedule*
- *Specify WPS Settings*
- *Use the Router as a Wireless Access Point*
- *Set Up the Router in Bridge Mode*
- *Set Up a Wireless Distribution System*

Disable LED Blinking or Turn Off LEDs

The router LEDs on the top panel indicate router activities and behavior. You can disable LED blinking for network communications, or turn off all LEDs except the Power LED.

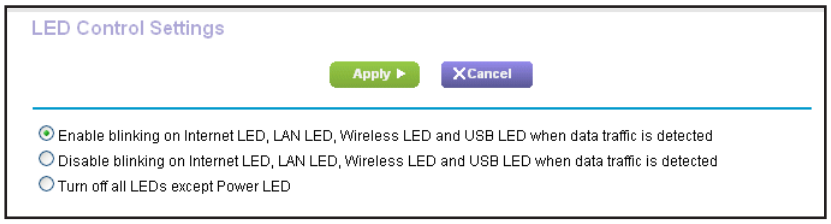
➢ **To disable LED blinking or turn off the LEDs:**

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 > LED Control Settings**.



   By default, the first radio button is selected, which allows standard LED behavior. For information about standard LED behavior, see *Table 1, LED and button descriptions* on page 10.
5. To disable blinking, select this radio button: **Disable blinking on Internet LED, LAN LED, Wireless LED, and USB LED when data traffic is detected**.
6. To turn off the LEDs, select this radio button: **Turn off all LEDs except Power LED**.
7. Click the **Apply** button.

   Your change takes effect.

View WAN Settings

You can view or configure wide area network (WAN) settings for the Internet port. You can set up a DMZ (demilitarized zone) server, change the maximum transmit unit (MTU) size, and enable the router to respond to a ping to its WAN (Internet) port.

➢ **To view the WAN 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 > Setup > WAN Setup.**

   The following settings display:

   - **Disable Port Scan and DoS Protection**. DoS protection protects your LAN against denial of service attacks such as Syn flood, Smurf Attack, Ping of Death, and many others. Select this check box only in special circumstances.
   - **Default DMZ Server**. This feature is sometimes helpful when you are playing online games or videoconferencing, but it makes the firewall security less effective. See *Set Up a Default DMZ Server* on page 106.
   - **Respond to Ping on Internet Port**. This feature allows your router to be discovered. Use this feature only as a diagnostic tool or for a specific reason.
   - **Disable IGMP Proxying**. IGMP proxying allows a computer on the local area network (LAN) to receive the multicast traffic it is interested in from the Internet. If you do not need this feature, you can select this check box to disable it.
   - **MTU Size (in bytes)**. The normal MTU (maximum transmit unit) value for most Ethernet networks is 1500 bytes, or 1492 bytes for PPPoE connections. Change the MTU only if you are sure that it is necessary for your ISP connection. See *Change the MTU Size* on page 39.
   - **NAT Filtering**. Network Address Translation (NAT) determines how the router processes inbound traffic. Secured NAT protects computers on the LAN from attacks from the Internet, but might prevent some Internet games, point-to-point applications, or multimedia applications from working. Open NAT provides a much less secured firewall, but allows almost all Internet applications to work.

5. Click the **Apply** button.

   Your changes are saved.

Set Up a Default DMZ Server

The default DMZ server feature is helpful when you are using some online games and videoconferencing applications that are incompatible with Network Address Translation (NAT). The router is programmed to recognize some of these applications and to work correctly with them, but other applications might not function well. In some cases, one local computer can run the application correctly if the IP address for that computer is entered as the default DMZ server.

WARNING:

DMZ servers pose a security risk. A computer designated as the default DMZ server loses much of the protection of the firewall and is exposed to exploits from the Internet. If compromised, the DMZ server computer can be used to attack other computers on your network.

The router usually detects and discards incoming traffic from the Internet that is not a response to one of your local computers or a service that you have configured in the Port Forwarding/Port Triggering screen. Instead of discarding this traffic, you can have the router forward the traffic to one computer on your network. This computer is called the default DMZ server.

➢ **To set up a default DMZ 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 > Setup > WAN Setup**.

   The WAN Setup screen displays.
5. Select the **Default DMZ Server** check box.
6. Type the IP address.
7. Click the **Apply** button.

   Your change takes effect.

Change the Router's Device Name

The router's device name is R6700. This device name displays in a file manager when you browse your network.

➢ **To change the router's device name:**

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 > LAN Setup**.

   The LAN Setup screen displays.
5. In the **Device Name** field, type a new name.
6. Click the **Apply** button.

   Your change is saved.

Change the LAN TCP/IP Settings

The router is preconfigured to use private IP addresses on the LAN side and to act as a DHCP server. The router's default LAN IP configuration is as follows:

- **LAN IP address**. 192.168.1.1
- **Subnet mask**. 255.255.255.0

These addresses are part of the designated private address range for use in private networks and are suitable for most applications. If your network requires a different IP addressing scheme, you can change these settings.

You might want to change the settings if you need a specific IP subnet that one or more devices on the network uses or if you use competing subnets with the same IP scheme.

➢ **To change the LAN TCP/IP settings:**

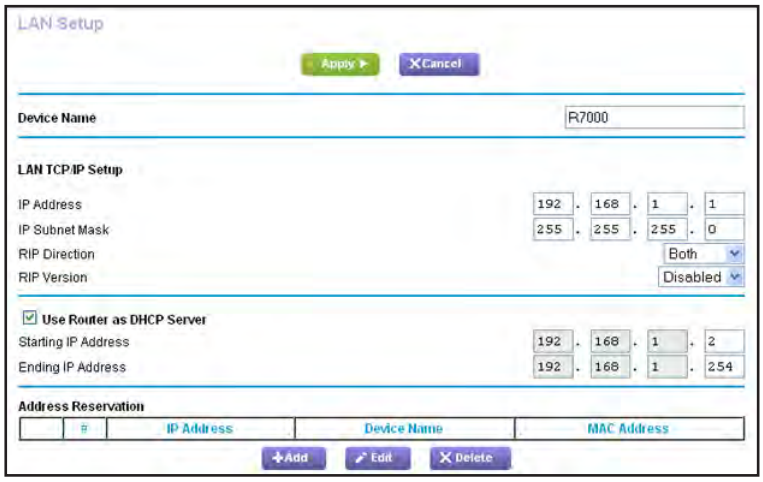
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   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 > Setup > LAN Setup**.



5. In the I**P Address** fields, type the IP address.
6. In the **IP Subnet Mask** fields, type the subnet mask of the router.

   The IP address and subnet mask identify which addresses are local to a specific device and which must be reached through a gateway or router.

7. Change the RIP settings.

   Router Information Protocol (RIP) allows a router to exchange routing information with other routers.

   a. In the **RIP Direction** list, select one of the following:
   - **Both**. The router broadcasts its routing table periodically and incorporates information that it receives.
   - **Out Only**. The router broadcasts its routing table periodically.
   - **In Only**. The router incorporates the RIP information that it receives.

   b. In the **RIP Version** list, select one of the following:
   - **Disabled**. This is the default setting.
   - **RIP-1**. This format is universally supported. It is adequate for most networks, unless you use an unusual network setup.
   - **RIP-2**. This format carries more information. Both RIP-2B and RIP-2M send the routing data in RIP-2 format. RIP-2B uses subnet broadcasting. RIP-2M uses multicasting.

8. Click the **Apply** button.

   Your changes are saved.

If you changed the LAN IP address of the router, you are disconnected when this change takes effect.

9. To reconnect, close your browser, relaunch it, and log in to the router.

Specify the IP Addresses That the Router Assigns

By default, the router acts as a Dynamic Host Configuration Protocol (DHCP) server. The router assigns IP, DNS server, and default gateway addresses to all computers connected to the LAN. The assigned default gateway address is the LAN address of the router.

These addresses must be part of the same IP address subnet as the router's LAN IP address. Using the default addressing scheme, define a range between 192.168.1.2 and 192.168.1.254, although you can save part of the range for devices with fixed addresses.

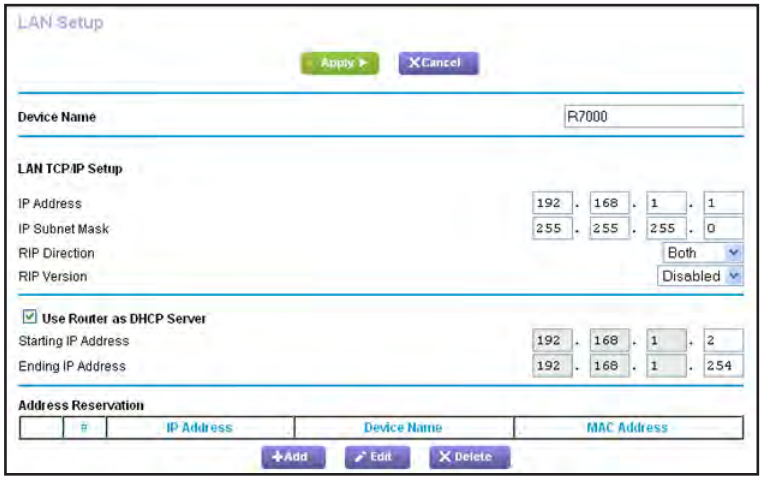
➢ **To specify the pool of IP addresses that the router assigns:**

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 > LAN Setup**.



5. Make sure that the **Use Router as DHCP Server** check box is selected.
6. Specify the range of IP addresses that the router assigns:

   a. In the **Starting IP Address** field, type the lowest number in the range.

   This IP address must be in the same subnet as the router.

b. In the **Ending IP Address** field, type the number at the end of the range of IP addresses.

   This IP address must be in the same subnet as the router.

7. Click the **Apply** button.

   Your settings are saved.

The router delivers the following parameters to any LAN device that requests DHCP:

- An IP address from the range that you define
- Subnet mask
- Gateway IP address (the router's LAN IP address)
- DNS server IP address (the router's LAN IP address)

Disable the DHCP Server Feature in the Router

By default, the router acts as a DHCP server. The router assigns IP, DNS server, and default gateway addresses to all computers connected to the LAN. The assigned default gateway address is the LAN address of the router.

You can use another device on your network as the DHCP server, or specify the network settings of all your computers.

➢ **To disable the DHCP server feature in 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**.

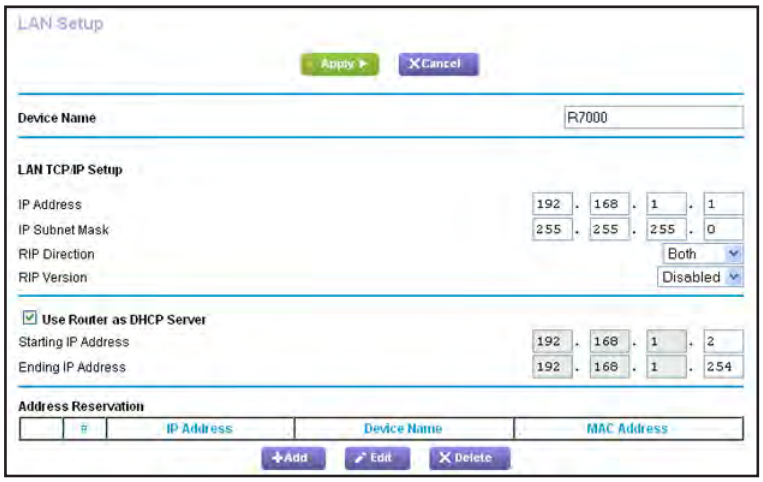
   A login screen displays.

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.

4. Select **ADVANCED > Setup > LAN Setup**.



5. Clear the **Use Router as DHCP Server** check box.
6. Click the **Apply** button.
7. (Optional) If this service is disabled and no other DHCP server is on your network, set your computer IP addresses manually so that they can access the router.

Reserve LAN IP Addresses

When you specify a reserved IP address for a computer on the LAN, that computer always receives the same IP address each time it accesses the router's DHCP server. Assign reserved IP addresses to computers or servers that require permanent IP settings.

➢ **To reserve an IP address:**

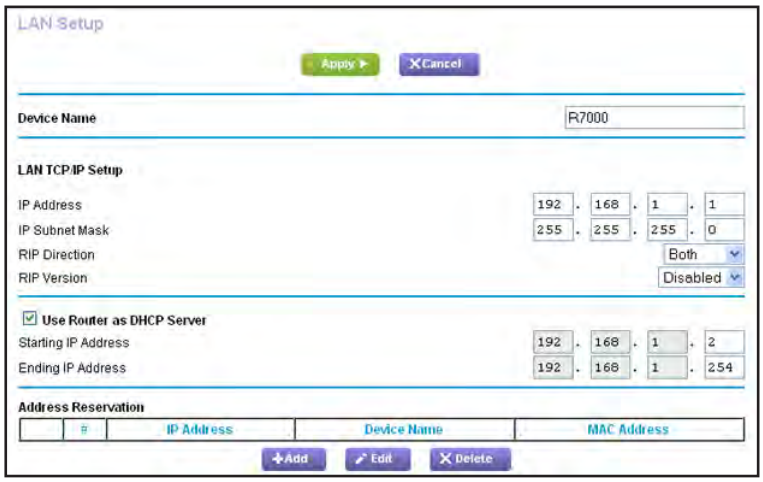
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   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 > LAN Setup**.



5. In the Address Reservation section, click the **Add** button.
6. In the **IP Address** field, type the IP address to assign to the computer or server.

   Choose an IP address from the router's LAN subnet, such as 192.168.1.x.
7. Type the MAC address of the computer or server.

   Tip: If the computer is already on your network, you can copy its MAC address from the Attached Devices screen and paste it here.
8. Click the **Apply** button.

   The reserved address is entered into the table.

The reserved address is not assigned until the next time the computer contacts the router's DHCP server. Reboot the computer, or access its IP configuration and force a DHCP release and renew.

Edit a Reserved LAN IP Address

➢ **To edit a reserved address entry:**

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 > LAN Setup**.

   The LAN Setup screen displays.
5. Select the radio button next to the reserved address.
6. Click the **Edit** button.
7. Change the settings.
8. Click the **Apply** button.

   Your changes are saved.

Delete a Reserved LAN IP Address

➢ **To delete a reserved address entry:**

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 > LAN Setup**.

   The LAN Setup screen displays.
5. Select the radio button next to the reserved address.
6. Click the **Delete** button.

   The address is removed.

Use the WPS Wizard for WiFi Connections

The WPS Wizard helps you add a wireless computer or device to your WiFi network without typing the WiFi password.

➢ **To use the WPS 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 > WPS Wizard**.

   A note explaining WPS displays.

5. Click the **Next** button.
6. Select a setup method:
   - **Push button**. Click the **WPS** button on this screen.
   - **PIN Number**. The screen adjusts. Enter the client security PIN, and click the **Next** button.
7. Within two minutes, go to the client device and use its WPS software to connect to the WiFi network.

   The WPS process automatically sets up your wireless computer with the network password when it connects. The router WPS screen displays a confirmation message.

Specify Basic WiFi Settings

The router comes with preset security. This means that the WiFi network name (SSID), network key (password), and security option (encryption protocol) are preset in the factory. You can find the preset SSID and password on the router label.

Note: The preset SSID and password are uniquely generated for every device to protect and maximize your wireless security.

NETGEAR recommends that you do not change your preset security settings. If you change your preset security settings, make a note of the new settings and store it in a safe place where you can easily find it.

If you use a wireless computer to change the SSID or other wireless security settings, you are disconnected when you click the **Apply** button. To avoid this problem, use a computer with a wired connection to access the router.

➢ **To specify basic wireless 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 **Wireless**.

5. In the **Region** list, select your region.

   In some locations, you cannot change this setting.

6. To control the SSID broadcast, select or clear the **Enable SSID Broadcast** check box.

   When this check box is selected, the router broadcasts its network name (SSID) so that it displays when you scan for local WiFi networks on your computer or wireless device.

7. To change the network name (SSID), type a new name in the **Name (SSID)** field.

   The name can be up to 32 characters long and it is case-sensitive. The default SSID is randomly generated and is on the router's label. If you change the name, make sure to write down the new name and keep it in a safe place.

8. To change the wireless channel, select a number in the **Channel** list.

   In some regions, not all channels are available. Do not change the channel unless you experience interference (shown by lost connections or slow data transfers). If this happens, experiment with different channels to see which is the best.

   When you use multiple access points, it is better if adjacent access points use different channels to reduce interference. The recommended channel spacing between adjacent access points is four channels (for example, use Channels 1 and 5, or 6 and 10).

9. To change the mode, select it from the **Mode** list.

   At 2.4 GHz, **Up to 450 Mbps** is the default setting. The other settings are **Up to 217 Mbps** and **Up to 54 Mbps**.

   At 5 GHz, **Up to 1300 Mbps** is the default setting, which allows 802.11ac and 802.11a wireless devices to join the network. The other settings are **Up to 450 Mbps** and **Up to 217 Mbps**.

10. Click the **Apply** button.

Your settings are saved.

If you connected wirelessly to the network and you changed the SSID, you are disconnected from the network.

11. Make sure that you can connect wirelessly to the network with its new settings.

    If you cannot connect wirelessly, check the following:

    - Is your computer or wireless device connected to another wireless network in your area? Some wireless devices automatically connect to the first open network without wireless security that they discover.
    - Is your computer or wireless device trying to connect to your network with its old settings (before you changed the settings)? If it is, update the wireless network selection in your computer or wireless device to match the current settings for your network.

Change the WiFi Security Option

Your router comes with preset WPA2 or WPA security. The password that you enter to connect to your network is unique to your router and is on the router label. NETGEAR recommends that you use the preset security, but you can change the settings. NETGEAR recommends that you do not disable security.

➢ **To change the WPA 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 **Wireless**.
5. Under Security Options, select a WPA option.

   The WPA2 options use the newest standard for the strongest security, but some older computers and wireless devices cannot use WPA2. By default, the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button is selected so that new or old computers and wireless devices can connect to the WiFi network by using either WPA2 or WPA security.

   The **Passphrase** field displays.
6. In the **Passphrase** field, enter the network key (password) that you want to use.

   It is a text string from 8 to 63 characters.

7. Write down the new password and keep it in a secure place for future reference.
8. Click the **Apply** button.

   Your changes are saved.

Set Up a Guest Network

A guest network allows visitors at your home to use the Internet without using your wireless security key. You can add a guest network to each wireless network: 2.4 GHz b/g/n and 5.0 GHz a/n.

➢ **To set up a guest network:**

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 **Guest Network**.

5. Select any of the following wireless settings:
   - **Enable Guest Network**. When this check box is selected, the guest network is enabled, and guests can connect to your network using the SSID of this profile.

- **Enable SSID Broadcast**. If this check box is selected, the wireless access point broadcasts its name (SSID) to all wireless stations. Stations with no SSID can adopt the correct SSID for connections to this access point.
- **Allow guests to see each other and access my local network**. If this check box is selected, anyone who connects to this SSID can access your local network, not just the Internet.

6. Give the guest network a name.

   The guest network name is case-sensitive and can be up to 32 characters. You then manually configure the wireless devices in your network to use the guest network name in addition to the main SSID.

7. Select a security option.

   The WPA2 options use the newest standard for the strongest security, but some older computers and wireless devices cannot use it. NETGEAR recommends that you select the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button. This setting protects your WiFi network and lets computers and wireless devices connect to the WiFi network by using either WPA2 or WPA security.

8. Click the **Apply** button.

   Your settings are saved.

How the Router Manages Wireless Clients

A wireless client is any computer or wireless device that connects to the router's WiFi network. The router uses airtime fairness and implicit beamforming to manage its wireless clients. These features are enabled by default, but you can disable them.

Airtime Fairness

Airtime fairness ensures that all clients receive equal time on the network. Network resources are divided by time, so if five clients are connected, they each get one-fifth of the network time. The advantage of this feature is that your slowest clients don't control network responsiveness. This feature is enabled by default, but you can disable it.

➢ **To disable airtime fairness:**

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 > Wireless Settings**.
5. Scroll down below the WPS Settings section of the screen and clear the **Enable AIRTIME FAIRNESS** check box.
6. Click the **Apply** button.

Implicit Beamforming

Implicit Beamforming contrasts with explicit Beamforming, which means that your router actively tracks clients and directs power to the router antenna closes to the client. This works whether or not the client supports Beamforming. Implicit Beamforming means that the router can use information from client devices that support Beamforming to improve the WiFi signal. This feature is enabled by default, but you can disable it.

➢ **To disable implicit Beamforming:**

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 > Wireless Settings**.

   The Wireless Settings screen displays.
5. Scroll down below the WPS Settings section and clear the **Enable Implicit BEAMFORMING** check box.
6. Click the **Apply** button.

Control the Wireless Radios

The router includes internal wireless radios that broadcast signals in the 2.4 GHz and 5 GHz ranges. By default, they are on so that you can connect wirelessly to the router. When the wireless radios are off, you can still use an Ethernet cable for a LAN connection to the router.

You can turn the wireless radios on and off with the **WiFi On/Off** button on the router, or you can log in to the router and enable or disable the wireless radios. If you are close to the router, it might be easier to press its **WiFi On/Off** button. If you are away from the router or you already logged in, it might be easier to enable or disable them. You can also turn the WiFi radios off and on based on a schedule. (See *Set Up a Wireless Schedule* on page 121.)

Use the WiFi On/Off Button

➢ **To turn the wireless radios off and on with the WiFi On/Off button:**

Press the **WiFi On/Off** button on the top of the router for two seconds.

If you turned off the wireless radios, the WiFi On/Off LED and the WPS LED turn off. If you turned on the wireless radios, the WiFi On/Off LED and the WPS LED light.

Enable or Disable the Wireless Radios

If you used the **WiFi On/Off** button to turn off the wireless radios, you can't log in to the router to turn them back on. You must press the **WiFi On/Off** button again for two seconds to turn the wireless radios back on.

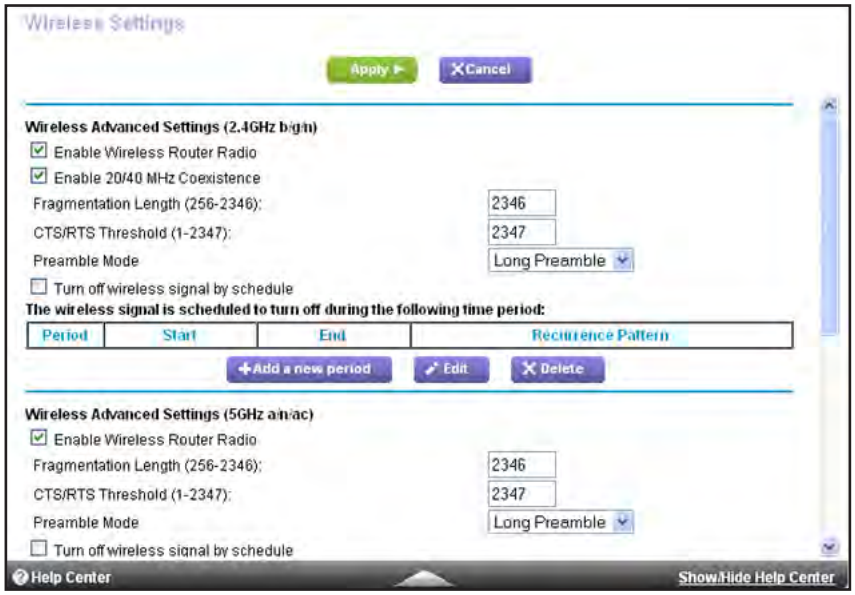
➢ **To enable or disable the wireless radios:**

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 > Wireless Settings**.



5. In the 2.4 GHz and 5 GHz sections of the screen, select or clear the **Enable Wireless Radio** check boxes.

Clearing these check boxes turns off the WiFi feature of the router.

6. Click the **Apply** button.

   If you turned off both wireless radios, the WiFi On/Off LED and the WPS LED turn off. If you turned on the wireless radios, the WiFi On/Off LED and the WPS LED light.

Set Up a Wireless Schedule

You can turn off the wireless signal from your router at times when you do not need a wireless connection. For example, you might turn it off for the weekend if you leave town.

➢ **To set up the wireless schedule:**

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 > Wireless Settings**.

   The Advanced Wireless Settings screen displays.
5. Click the **Add a new period** button.

6. Use the lists, radio buttons, and check boxes to set up a period during which you want to turn off the wireless signal.
7. Click the **Apply** button.

   The Advanced Wireless Settings screen displays.
8. Select the **Turn off wireless signal by schedule** check box to activate the schedule.

9. Click the **Apply** button.

   Your settings are saved.

Specify WPS Settings

Wi-Fi Protected Setup (WPS) lets you join the WiFi network without typing the WiFi password.

➢ **To specify WPS 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 > Advanced Setup > Wireless Settings**.

   The Router's PIN field displays the PIN that you use on a registrar (for example, from the Network Explorer on a Vista Windows computer) to configure the router's wireless settings through WPS.
5. (Optional) Select or clear the **Enable Router's PIN** check box.

   The PIN function might temporarily be disabled when the router detects suspicious attempts to break into the router's wireless settings by using the router's PIN through WPS. You can manually enable the PIN function by selecting the **Enable Router's PIN** check box.
6. (Optional) Select or clear the **Keep Existing Wireless Settings** check box.

   By default, the **Keep Existing Wireless Settings** check box is selected. NETGEAR recommends that you leave this check box selected.

   If you clear this check box, the next time a new wireless client uses WPS to connect to the router, the router wireless settings change to an automatically generated random SSID and security key.
7. Click the **Apply** button.

   Your changes are saved.

Use the Router as a Wireless Access Point

You can set up the router to run as an access point (AP) on the same local network as another router.

➢ **To set up the router as an AP:**

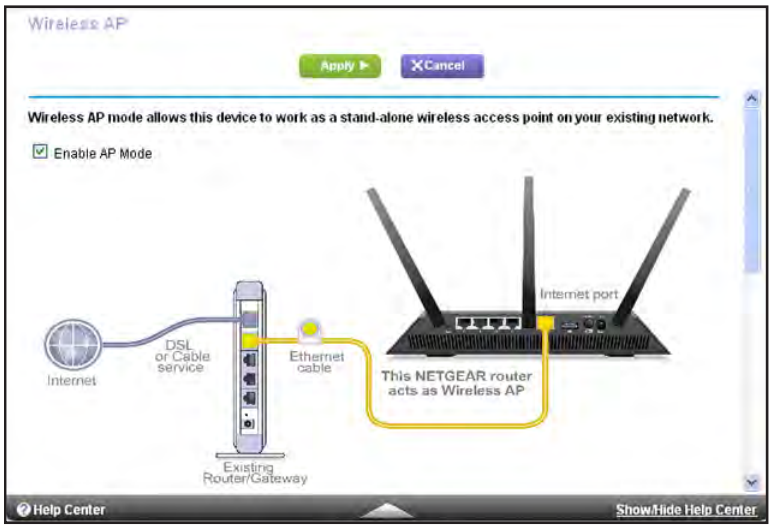
1. Use an Ethernet cable to connect the Internet port of this router to an Ethernet port in the other router.

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

   A login screen displays.
4. 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.
5. Select **ADVANCED > Advanced Setup > Wireless AP**.



6. Select the **Enable AP Mode** check box.

7. Scroll down and select an IP address setting radio button:
   - **Get dynamically from existing router**. The other router on the network assigns an IP address to this router while this router is in AP mode.
   - **Enable fixed IP settings on this device (not recommended)**. Use this setting if you want to manually assign a specific IP address to this router while it is in AP mode. Using this option effectively requires advanced network experience.

   Note: To avoid interference with other routers or gateways in your network, NETGEAR recommends that you use different wireless settings on each router. You can also turn off the wireless radio on the other router or gateway and use the R6700 router only for wireless client access.

8. Click the **Apply** button.

   The IP address of the router changes, and you are disconnected.

9. To reconnect, close and restart your browser and type **http://www.routerlogin.net**.

Set Up the Router in Bridge Mode

You can use your router in bridge mode to connect multiple devices wirelessly at the faster 802.11ac speed. You need two routers: one set up as a router and the other set up as a bridge.

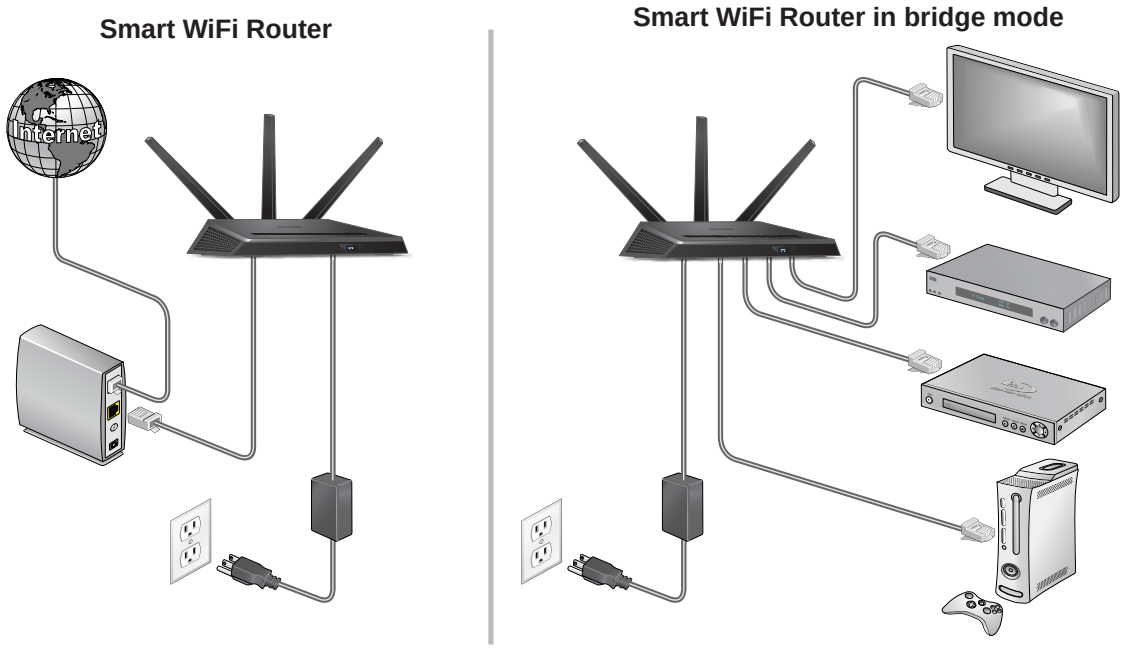


Figure 12. Router in bridge mode with an 802.11ac WiFi connection

Installing your R6700 router as a bridge offers the following benefits:

- Take advantage of gigabit WiFi speeds on current devices.

- Use Gigabit WiFi for applications like video and gaming.
- Connect multiple devices like NAS, Smart TV, NeoTV, Blu-ray player, and game consoles at gigabit WiFi speeds using a WiFi link.
- Avoid the need for separate WiFi adapters for each device.

For example, you can install the first router in a room like a home office where you connect to the Internet, then set up the second router in bridge mode. Place the router in bridge mode in a different room with your home entertainment center. Cable the router in bridge mode to your Smart TV, DVR, game console or Blu-ray player, and use its 802.11ac WiFi connection to the first router.

➢ **To set up bridge mode:**

1. Make a note of the WiFi settings of the other router to which this router will connect.

   You need to know the SSID, WiFi security mode, wireless password, and operating frequency (either 2.4 GHz or 5 GHz).

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

   A login screen displays.

4. 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.

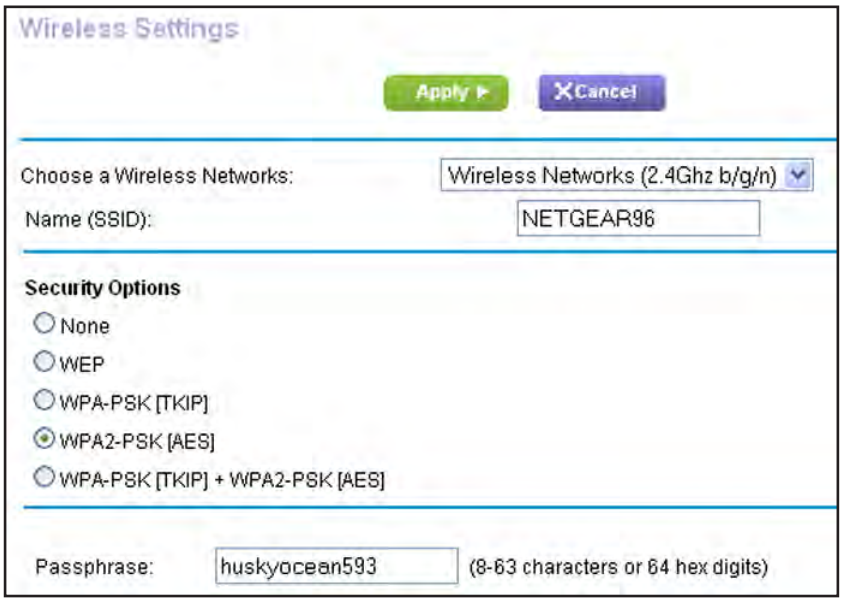
5. Select **ADVANCED > Advanced Setup > Wireless Settings**.

   The Wireless Settings screen displays.

6. Scroll down and select the **Use other operation mode** check box.
7. Select the **Enable Bridge mode** radio button.

   The screen adjusts.

8. Click the **setup bridge mode wireless settings** button.



9. Specify the settings of the other router to which this router will connect.
   a. Select the wireless network frequency (**2.4 GHz** or **5 GHz**).

      For 802.11ac mode, select **5 GHz**.
   b. In the **Name (SSID)** field, enter the wireless network name (SSID).
   c. In the Security Option section, select a radio button.
   d. If prompted, type the passphrase (the WiFi password that you use to connect wirelessly to the other router).
10. Click the **Apply** button.

    The settings for the other router are saved and the Advanced Wireless Settings screen displays.
11. Click the **Apply** button.

    Your changes take effect.

Set Up a Wireless Distribution System

The router can act as a wireless base station or a wireless repeater in a wireless distribution system (WDS). A WDS expands a wireless network through multiple access points. A wireless base station connects to the Internet, can be connected to wired and wireless clients, and sends its wireless signal to an access point that functions as a wireless repeater. A wireless repeater can also be connected to wired and wireless clients, but connects to the

Internet through the wireless base station. The following figure shows a wireless repeating scenario.

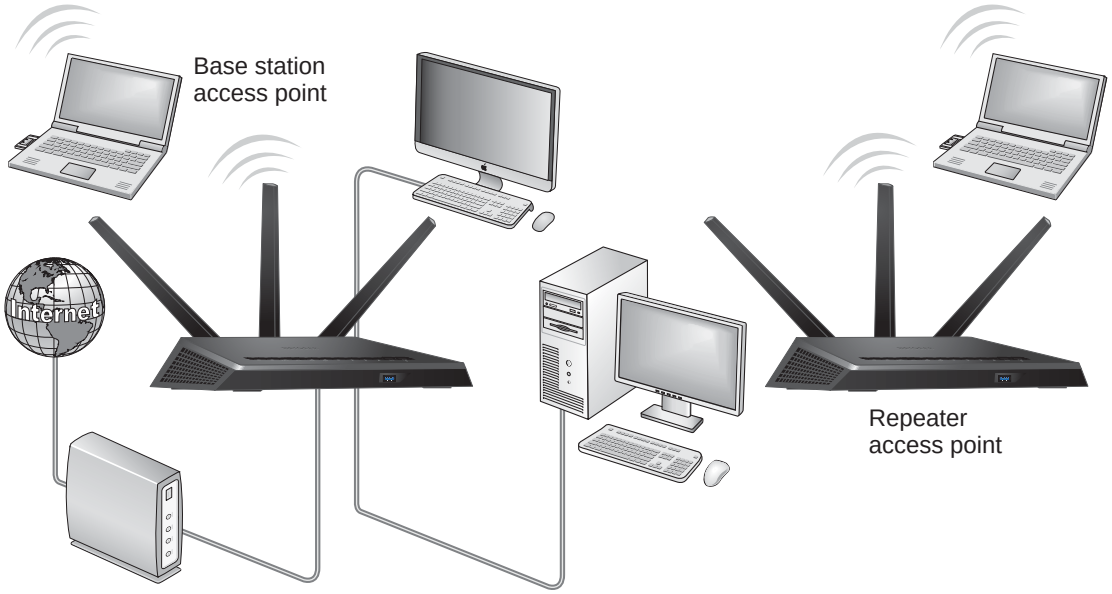


Figure 13. Wireless repeating scenario

Note: For you to use the wireless repeating function, security for your router cannot be enabled and the router cannot use the auto channel feature.

You must set up a wireless base station and a wireless repeater:

- **Wireless base station**. The router acts as the parent access point that bridges traffic to and from the child repeater access point. The base station also handles wireless and wired local computers. To configure this mode, you must know the MAC addresses of the child repeater access point. Often, the MAC address is on the product label.
- **Wireless repeater**. The router sends all traffic from its local wireless or wired computers to a remote access point. To configure this mode, you must know the MAC address of the remote parent access point.

The router is always in dual-band concurrent mode, unless you turn off one radio. If you enable the wireless repeater in either radio band, the wireless base station or wireless repeater cannot be enabled in the other radio band. However, if you enable the wireless base station in either radio band and use the other radio band as a wireless router or wireless base station, dual-band concurrent mode is not affected.

Before you can set up a wireless network with WDS, both access points must meet the following conditions:

- Use the same SSID, wireless channel, and encryption mode.
- Be on the same LAN IP subnet. That is, all of the access point LAN IP addresses are in the same network.
- All LAN devices (wired and wireless computers) are configured to operate in the same LAN network address range as the access points.

Set Up the Base Station

The wireless repeating function works only in hub and spoke mode. The units cannot be daisy-chained. You must know the wireless settings for both units. You must know the MAC address of the remote unit. First, set up the base station, then set up the repeater.

➢ **To set up the base station:**

1. Set up both units with the same wireless settings.

   The SSID and mode must be the same and the wireless security option must be set to **None**.

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

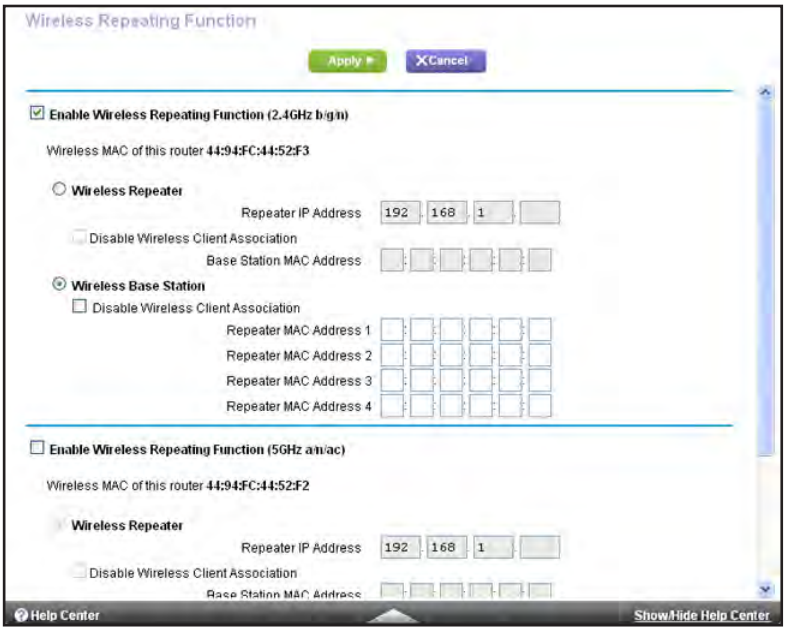
   A login screen displays.

4. 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.

5. Select **ADVANCED > Advanced Setup > Wireless Repeating Function**.



6. Select the **Enable Wireless Repeating Function** check box.
7. Select the **Wireless Base Station** radio button.
8. To prevent wireless clients from associating with the base station and allow LAN client associations only, select the **Disable Wireless Client Association** check box.

You can leave the check box cleared if you prefer wireless clients to be able to associate with the base stations.

9. In the **Repeater MAC Address 1** through **4** fields, enter the MAC addresses for the access points that should function as repeaters.

   If your router is the base station, it can function as the “parent” for up to four other access points.

10. Click the **Apply** button.

    Your changes are saved.

Set Up a Repeater

Use a wired Ethernet connection to set up the repeater unit to avoid conflicts with the wireless connection to the base station.

If you are using the router as the base station with a non-NETGEAR router as the repeater, you might need to change more configuration settings. In particular, disable the DHCP server function on the access point that is the repeater.

➢ **To configure a NETGEAR router as a repeater:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network of the router to be the repeater.
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.

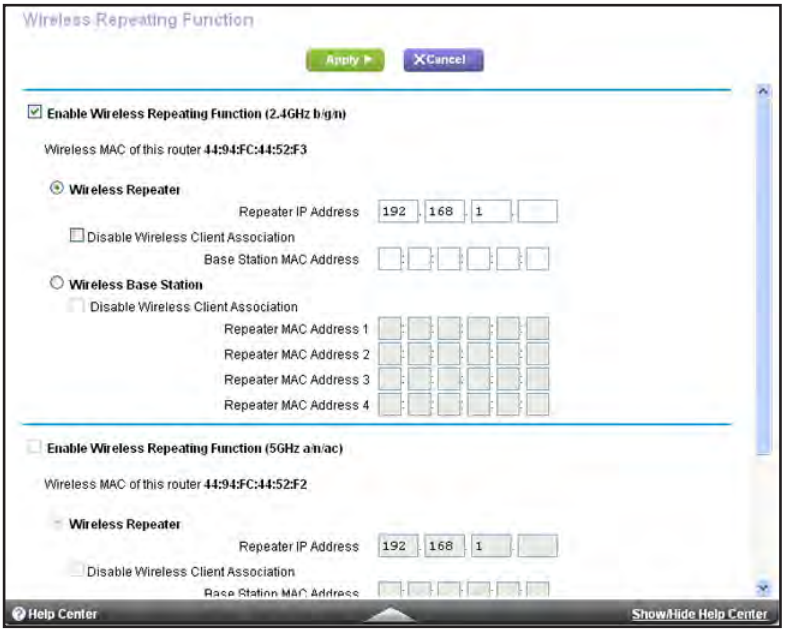
   The BASIC Home screen displays.
4. Select **Wireless**.

   The Wireless screen displays.
5. Verify that the wireless settings match the base unit exactly.

   The wireless security option must be set to **None**.
6. Select **ADVANCED > Wireless Repeating Function**.

   The Wireless Repeating Function screen displays.
7. Select the **Enable Wireless Repeating Function** check box**.**

8. Select the **Wireless Repeater** radio button.



9. In the **Repeater IP Address** fields, type the IP address of the repeater router.

   This IP address must be in the same subnet as the base station, but different from the LAN IP address of the base station.

10. To prevent wireless clients from associating with the repeater and allowing LAN client associations only, select the **Disable Wireless Client Association** check box.

    You can leave the check box cleared if you prefer wireless clients to be able to associate with the repeater.

11. In the **Base Station MAC Address** fields, enter the MAC addresses for the access point that will be the base station.

12. Click the **Apply** button.

    Your changes are saved.

13. Verify connectivity across the LANs.

    A computer on any wireless or wired LAN segment of the router can connect to the Internet or share files and printers with any other computer or server connected to the other access point.

Manage Your Network

11

This chapter describes the router settings for administering and maintaining your router and home network.

This chapter includes the following sections:

- *Update the Router Firmware*
- *Change the admin Password*
- *Set Up Password Recovery*
- *Recover the admin Password*
- *View Router Status*
- *View Logs of Router Activity*
- *Monitor Internet Traffic*
- *Create Custom Static Routes*
- *View Devices Currently on the Network*
- *Manage the Router Configuration File*
- *Remote Management*

Update the Router Firmware

The router firmware (routing software) is stored in flash memory. You might see a message at the top of the genie screens when new firmware is available. You can respond to that message to update the firmware, or you can check to see if new firmware is available, and to update your product.

➢ **To check for new firmware and update your 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.
4. Select **ADVANCED > Administration > Router Update**.

   The Router Update screen displays.
5. Click the **Check** button.

   The router finds new firmware information if any is available and displays a message asking if you want to download and install it.
6. Click the **Yes** button.

   The router locates and downloads the firmware and begins the update.

WARNING:

To avoid the risk of corrupting the firmware, do not interrupt the update. For example, do not close the browser, click a link, or load a new page. Do not turn off the router.

When the update is complete, your router restarts. The update process typically takes about one minute. Read the new firmware release notes to find out if you need to reconfigure the router after updating.

Change the admin Password

This feature let you change the default password that is used to log in to the router with the user name admin. This password is not the one that you use for WiFi access.

Note: Be sure to change the password for the user name admin to a secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It can be up to 30 characters.

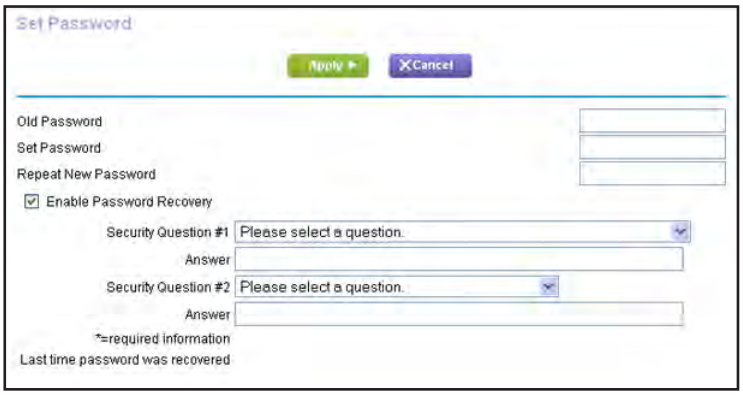
➢ **To set the password for the user name admin:**

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 > Administration > Set Password**.



5. Type the old password, and type the new password twice.
6. To be able to recover the password, select the **Enable Password Recovery** check box.

   NETGEAR recommends that you enable password recovery.
7. Click the **Apply** button.

   Your changes take effect.

Set Up Password Recovery

NETGEAR recommends that you enable password recovery if you change the password for the router user name admin. Then you can recover the password if it is forgotten. This recovery process is supported in Internet Explorer, Firefox, and Chrome browsers, but not in the Safari browser.

➢ **To set up password recovery:**

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 > Administration > Set Password**.

   The Set Password screen displays.
5. Select the **Enable Password Recovery** check box.
6. Select two security questions and provide answers to them.
7. Click the **Apply** button.

   Your changes are saved.

Recover the admin Password

➢ **To recover your password:**

1. In the address field of your browser, type **www.routerlogin.net**.

   A login screen displays.
2. Click the **Cancel** button.

   If password recovery is enabled, are prompted to enter the serial number of the router.

   The serial number is on the product label.
3. Enter the serial number of the router.
4. Click the **Continue** button.

   A screen displays requesting the answers to your security questions.
5. Enter the saved answers to your security questions.
6. Click the **Continue** button.

   A screen displays your recovered password.
7. Click the **Login again** button.

   A login screen displays.
8. With your recovered password, log in to the router.

View Router Status

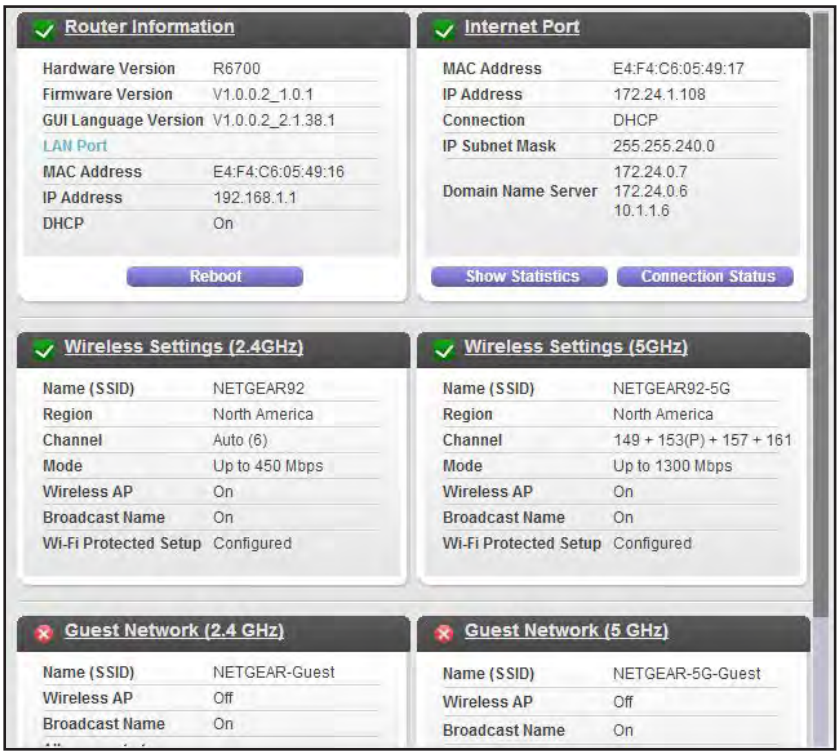
➢ **To view router status and usage information:**

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. Click the **ADVANCED** tab.



5. For information about the displayed settings, click the **Show/Hide Help Center** link at the bottom of the screen.

Display Internet Port Statistics

➢ **To display Internet port statistics:**

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.

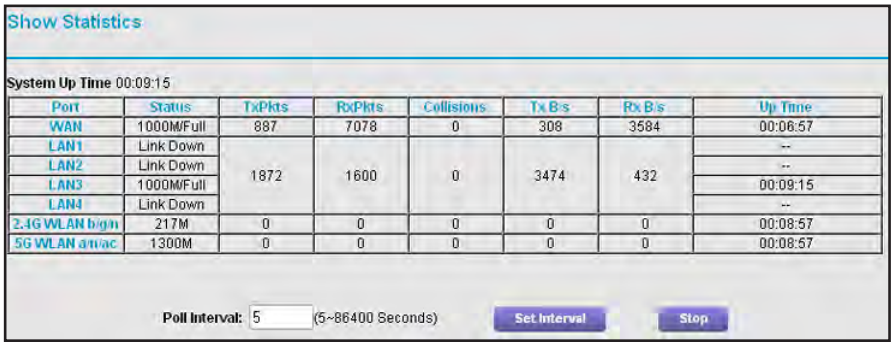
3. Enter the router user name and password.

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

4. The BASIC Home screen displays
5. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.

6. In the Internet Port pane, click the **Show Statistics** button.



Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
WAN	1000M/Full	887	7078	0	308	3584	00:06:57
LAN1	Link Down	1872	1600	0	3474	432	--
LAN2	Link Down						--
LAN3	1000M/Full						00:09:15
LAN4	Link Down						--
2.4G WLAN b/g/n	217M	0	0	0	0	0	00:08:57
5G WLAN a/n/ac	1300M	0	0	0	0	0	00:08:57

The following information displays:

- **System Up Time**. The time elapsed since the router was last restarted.
- **Port**. The statistics for the WAN (Internet) and LAN (Ethernet) ports. For each port, the screen displays the following information:
  - **Status**. The link status of the port.
  - **TxPkts**. The number of packets transmitted on this port since reset or manual clear.
  - **RxPkts**. The number of packets received on this port since reset or manual clear.
  - **Collisions**. The number of collisions on this port since reset or manual clear.
  - **Tx B/s**. The current transmission (outbound) bandwidth used on the WAN and LAN ports.
  - **Rx B/s**. The current reception (inbound) bandwidth used on the WAN and LAN ports.
  - **Up Time**. The time elapsed since this port acquired the link.
  - **Poll Interval**. The interval at which the statistics are updated in this screen.

7. To change the polling frequency, enter a time in seconds in the **Poll Interval** field and click the **Set Interval** button.

To stop the polling entirely, click the **Stop** button.

Check the Internet Connection Status

➢ **To check the Internet connection status:**

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. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.
5. In the Internet Port pane, click the **Connection Status** button.

   The following information displays:

   - **IP Address**. The IP address that is assigned to the router.
   - **Subnet Mask**. The subnet mask that is assigned to the router.
   - **Default Gateway**. The IP address for the default gateway that the router communicates with.
   - **DHCP Server**. The IP address for the Dynamic Host Configuration Protocol server that provides the TCP/IP configuration for all the computers that are connected to the router.
   - **DNS Server**. The IP address of the Domain Name Service server that provides translation of network names to IP addresses.
   - **Lease Obtained**. The date and time when the lease was obtained.
   - **Lease Expires**. The date and time that the lease expires.
6. To return the status of all items to 0, click the **Release** button.
7. To refresh the screen, click the **Renew** button.

8. To exit the screen, click the **Close Window** button.

View Logs of Router Activity

The log is a detailed record of the websites you have accessed or attempted to access and other router actions. Up to 256 entries are stored in the log. Log entries display only when keyword blocking is enabled and no log entries are made for the trusted user.

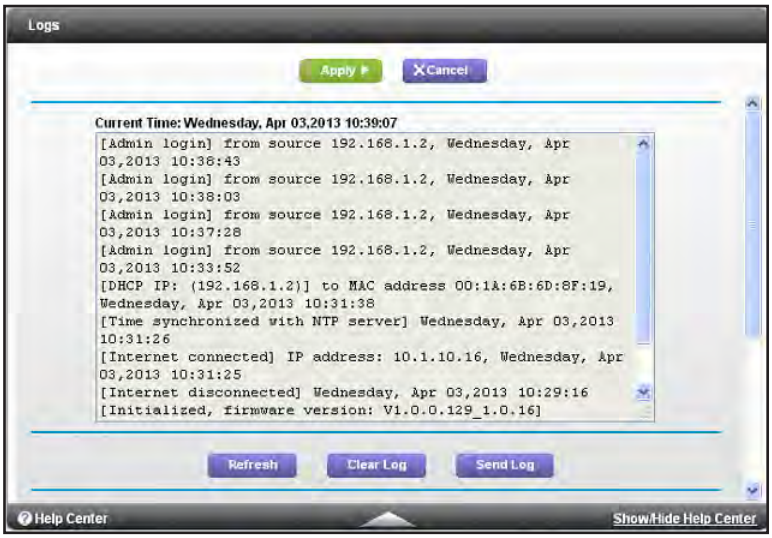
➢ **To view logs:**

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 > Administration > Logs**.



The Logs screen shows the following information:

- **Action**. The action that occurred, such as whether Internet access was blocked or allowed.
- **Date and time**. The date and time the log entry was recorded.
- **Source IP**. The IP address of the initiating device for this log entry.
- **Target address**. The name or IP address of the website or news group visited or to which access was attempted.

5. To customize the logs, scroll down and clear or select the check boxes.

To refresh the log screen, click the **Refresh** button.

To clear the log entries, click the **Clear Log** button.

To email the log immediately, click the **Send Log** button.

Monitor Internet Traffic

Traffic metering allows you to monitor the volume of Internet traffic that passes through the router Internet port. You can set limits for traffic volume.

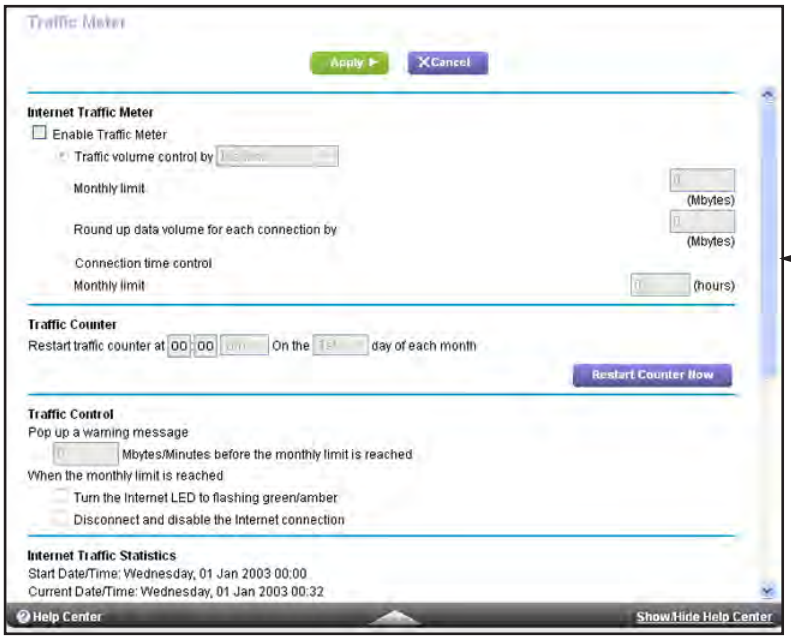
➢ **To monitor Internet traffic:**

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 > Traffic Meter**.



Scroll to view more settings

5. Select the **Enable Traffic Meter** check box.
6. (Optional) Control the volume of Internet traffic.

You can use either the traffic volume control feature or the connection time control feature:

- Select the **Traffic volume control by** radio button and then select one of the following options:
  - **No Limit**. No restriction is applied when the traffic limit is reached.
  - **Download only**. The restriction is applied to incoming traffic only.
  - **Both Directions**. The restriction is applied to both incoming and outgoing traffic.
- Select the **Connection time control** radio button and enter the allowed hours in the **Monthly limit** field.

7. (Optional) If your ISP charges for extra data volume when you make a new connection, enter the extra data volume in MB in the **Round up data volume for each connection by** field.
8. In the Traffic Counter section, set the traffic counter to begin at a specific time and date.

   If you want the traffic counter to start immediately, click the **Restart Counter Now** button.
9. In the Traffic Control section, specify whether the router will issue a warning message before the monthly limit of Mbytes or hours is reached.

   By default, the value is 0 and no warning message is issued. You can select one of the following to occur when the limit is attained:

   - The Internet LED blinks green or amber.
   - The Internet connection is disconnected and disabled.
10. Click the **Apply** button.

    The Internet Traffic Statistics section helps you to monitor the data traffic.
11. To update the Traffic Statistics section, click the **Refresh** button.
12. To display more information about the data traffic on your router and to change the poll interval, click the **Traffic Status** button.

Create Custom Static Routes

Typically, you do not need to add static routes unless you use multiple routers or multiple IP subnets on your network.

As an example of when a static route is needed, consider the following case:

- Your main Internet access is through a cable modem to an ISP.
- You use an ISDN router on your home network for connecting to the company where you are employed. This router's address on your LAN is 192.168.1.100.
- Your company's network address is 134.177.0.0.

When you set up your router, two implicit static routes were created. A default route was created with your ISP as the gateway, and a second static route was created to your local network for all 192.168.1.x addresses. With this configuration, if you try to access a device on

the 134.177.0.0 network, your router forwards your request to the ISP. The ISP forwards your request to the company where you are employed and the company firewall is likely to deny the request.

In this case you must define a static route, telling your router to access 134.177.0.0 through the ISDN router at 192.168.1.100. Here is an example:

- The **Destination IP Address** and **IP Subnet Mask** fields specify that this static route applies to all 134.177.x.x addresses.
- The **Gateway IP Address** field specifies that all traffic for these addresses will be forwarded to the ISDN router at 192.168.1.100.
- A metric value of 1 works because the ISDN router is on the LAN.
- The **Private** check box is selected only as a precautionary security measure in case RIP is activated.

➢ **To set up a static route:**

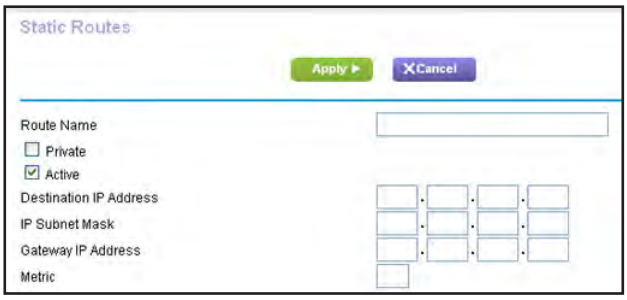
1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   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 > Static Routes**.

   The Static Routes screen displays.
5. Click the **Add** button.



6. In the **Route Name** field, type a name for this static route (for identification purposes only.)
7. To limit access to the LAN only, select the **Private** check box.

   If the **Private** checkbox is selected, the static route is not reported in RIP.
8. To make this route effective, select the **Active** check box.
9. Type the IP address of the final destination.

10. Type the IP subnet mask for this destination.

    If the destination is a single host, type **255.255.255.255**.

11. Type the gateway IP address, which must be on the same LAN segment as the router.
12. Type a number from 1 through 15 as the metric value.

    This value represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works, but if this is a direct connection, set it to **1**.

13. Click the **Apply** button.

    The static route is added.

Edit a Static Router

➢ **To edit a static route:**

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 > Static Routes**.

   The Static Routes screen displays.

5. In the table, select the radio button for the route.
6. Click the **Edit** button.

   The Static Routes screen adjusts.

7. Edit the route information.
8. Click the **Apply** button.

   Your changes are saved.

Delete a Static Router

➢ **To delete a static route:**

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 > Static Routes**.

   The Static Routes screen displays.

5. In the table, select the radio button for the route.
6. Click the **Delete** button.

   The route is removed from the table.

View Devices Currently on the Network

You can view all computers or devices that are currently connected to your network.

➢ **To view devices on the network:**

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**.

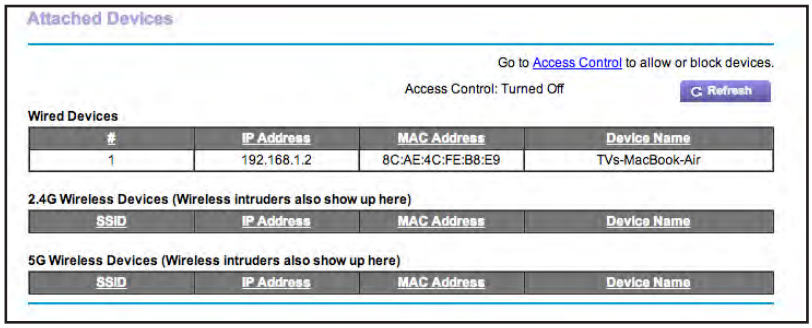
   A login screen displays.

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 **Attached Devices**.



   The Wired Devices section lists devices that are connected to the router with Ethernet cables. The Wireless Devices section lists devices that are connected to the wireless network. The following information is displayed

   - # (number). The order in which the device joined the network.
   - **IP Address**. The IP address that the router assigned to this device when it joined the network. This number can change if a device is disconnected and rejoins the network.

- **MAC Address**. The unique MAC address for each device does not change. The MAC address is typically shown on the product label.
- **Device Name**. If the device name is known, it is shown here.

5. To update this screen, click the **Refresh** button.

Manage the Router Configuration File

The configuration settings of the router are stored within the router in a configuration file. You can back up (save) this file to your computer, restore the settings, or reset the router to the factory default settings.

Back Up Settings

➢ **To back up the router's configuration 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 > Administration > Backup Settings**.

5. Click the **Back Up** button.
6. If your computer prompts you to choose a location for the settings file, specify a location on you computer and click the **Save** button.

   A copy of the current settings is saved to your computer.

Restore Configuration Settings

➢ **To restore configuration settings that you backed up:**

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 > Administration > Backup Settings**.

   The Backup Settings screen displays.
5. Click the **Browse** button to find and select the `.cfg` file.
6. Click the **Restore** button.

   The file is uploaded to the router and the router reboots.

WARNING:

Do not interrupt the whole reboot process.

Erase the Current Configuration Settings

You can erase the current configuration and restore the factory default settings. You might want to do this if you move the router to a different network. (See *Factory Settings* on page 178.)

➢ **To erase the configuration 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 > Administration > Backup Settings**.

   The Backup Settings screen displays.

5. Click the **Erase** button.

   The factory default settings are restored. The user name is admin, the password is password, and the LAN IP address is 192.168.1.1. DHCP is enabled.

Remote Management

You can access your router over the Internet to view or change its settings. You must know the router's WAN IP address to use this feature. For information about remote access using Dynamic DNS, see *Chapter 7, Access the Router's USB Drive Through the Internet*.

Note: Be sure to change the password for the user name admin to a secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It can be up to 30 characters. See *Change the admin Password* on page 132.

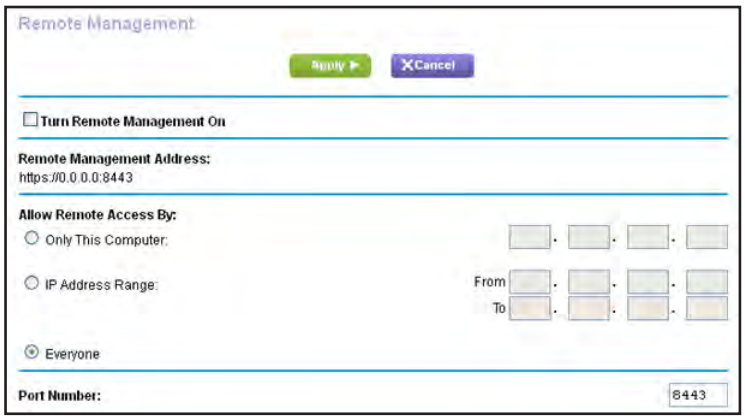
➢ **To set up remote management:**

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 > Remote Management**.



5. Select the **Turn Remote Management On** check box.

6. In the Allow Remote Access By section, specify the external IP addresses to be allowed to access the router's remote management.

   Note: For enhanced security, restrict access to as few external IP addresses as practical.

   Select one of the following:

   - **Only this computer**. Allow access from a single IP address on the Internet. Enter the IP address to be allowed access.
   - **IP Address Range**. Allow access from a range of IP addresses on the Internet. Enter a beginning IP address and an ending IP address to define the allowed range.
   - **Everyone**. Allow access from any IP address on the Internet.

7. Specify the port number for accessing the web management interface.

   Normal web browser access uses the standard HTTP service port 80. For greater security, enter a custom port number for the remote web management interface. Choose a number from 1024 to 65535, but do not use the number of any common service port. The default is 8080, which is a common alternate for HTTP.

8. Click the **Apply** button.

   Your changes take effect.

➢ **To use remote access:**

1. Launch an Internet browser on a computer that is not on your home network.
2. Type your router's WAN IP address into your browser's address or location field followed by a colon (:) and the custom port number.

   For example, if your external address is 134.177.0.123 and you use port number 8080, enter **http://134.177.0.123:8080** in your browser.

Use VPN to Access Your Network 12

You can use OpenVPN software to remotely access your router using virtual private networking (VPN). This chapter explains how to set up and use VPN access.

This chapter includes the following sections:

- *Set Up a VPN Connection*
- *Specify VPN Service in the Router*
- *Install OpenVPN Software on Your Computer*
- *Use a VPN Tunnel*
- *Use VPN to Access the Router's USB Drive and Media*
- *Use VPN to Access Your Internet Service at Home*

Set Up a VPN Connection

A virtual private network (VPN) lets you use the Internet to securely access your network when you aren't home.

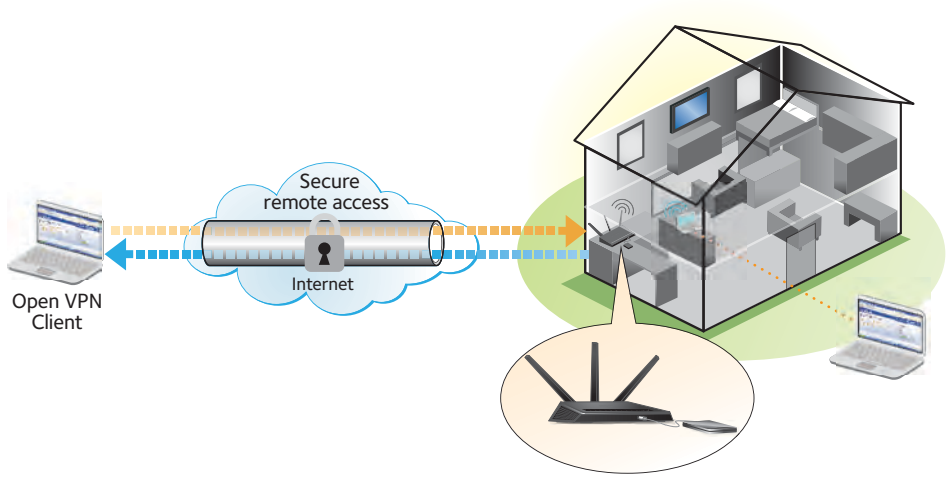


Figure 14. VPN provides a secure tunnel between your home network and a remote computer

This type of VPN access is called a client-to-gateway tunnel. The computer is the client, and the router is the gateway. To use the VPN feature, you must log in to the router and enable VPN, and you must install and run VPN client software on the computer.

Note: The router currently does not support iOS or Android VPN client software.

VPN uses DDNS or a static IP address to connect with your router.

To use a DDNS service, register for an account with a host name (sometimes called a domain name). You use the host name to access your network. The router supports these accounts: NETGEAR www.no-ip.com, www.no-ip.com, and www.DynDNS.org.

If your Internet service provider (ISP) assigned a static WAN IP address (such as 50.196.x.x or 10.x.x.x) that never changes to your Internet account, the VPN can use that IP address to connect to your home network.

Specify VPN Service in the Router

You must specify the VPN service settings in the router before you can use a VPN connection.

➢ **To specify the VPN service:**

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 > VPN Service**.

   The VPN Service screen displays.
5. Select the **Enable VPN Service** check box.

   By default, the VPN uses the UDP service type and uses port 12974. If you want to customize the service type and port, NETGEAR recommends that you change these settings before you install the OpenVPN software.
6. To change the service type, scroll down and select the **TCP** radio button.
7. To change the port, scroll down to the **Service Port** field, and type the port number that you want to use.
8. Click the **Apply** button.

   Your changes are saved. VPN is enabled in the router, but you must install and set up OpenVPN software on your computer before you can use a VPN connection.

Install OpenVPN Software on Your Computer

You must install this software on each computer that you plan to use for VPN connections to your router.

➢ **To install VPN client software:**

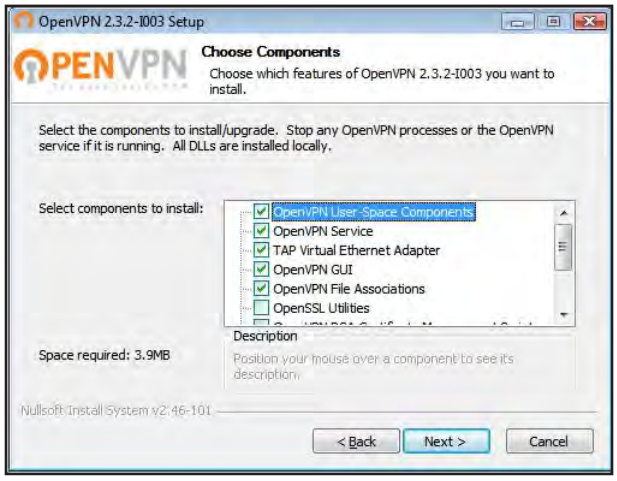
1. Visit *http://openvpn.net/index.php/download/community-downloads.html*.
2. In the Windows Installer section of the screen, double-click the **`openVPN-install-xxx.exe`** link.
3. Download the file.

4. To install the Open VPN software on your computer, click the **`openVPN-install-xxx.exe`** file.

   The OpenVPN Setup Wizard displays:

5. Click the **Next** button.
6. Read the License Agreement and click the **I Agree** button.

   The Choose Components screen displays:



7. Leave the check boxes selected as shown, and click the **Next** button.
8. To specify the destination folder, click the **Browse** button and select a destination folder.

The following screen displays:

9. Click the **Install** button.

   The screen displays the progress of the installation and then displays the final installation screen.

10. Click the **Finish** button.
11. Unzip the configuration files that you downloaded and copy them to the folder where the VPN client is installed on your device.

    For a client device with Windows 64-bit system, the VPN client is installed at `C:\Program files\OpenVPN\config\` by default.

12. For a client device with Windows, modify the VPN interface name to **NETGEAR-VPN**:
    a. In Windows, select **Start > Control Panel > Network and Internet > Network Connections**.
    b. In the Local Area Connection list, find the local area connection with the device name **TAP-Windows Adapter**.
    c. Select the local area connection and change its name (not its device name) to **NETGEAR-VPN**.

    If you do not change the VPN interface name, the VPN tunnel connection will fail.

Use a VPN Tunnel

After you set up the router to use VPN and install the OpenVPN application on your computer, you can open a VPN tunnel from your computer to your router over the Internet.

For the VPN tunnel to work, the local LAN IP address of the remote R6700 router must use a different LAN IP scheme from that of the local LAN where your VPN client computer is connected. If both networks use the same LAN IP scheme, when the VPN tunnel is established, you cannot access your home router or your home network with the OpenVPN software.

The default LAN IP address scheme for the R6700 router is 192.x.x.x. The most common IP schemes are 192.x.x.x, 172.x.x.x, and 10.x.x.x. If you experience a conflict, change the IP scheme either for your home network or for the network with the client VPN computer. For information about changing these settings, see *Change the LAN TCP/IP Settings* on page 107.

➢ **To open a VPN tunnel:**

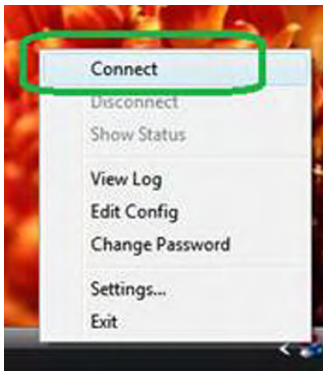
1. Launch the OpenVPN application with administrator privileges.

The **OpenVPN** icon displays in the Windows taskbar.

Tip: You can create a shortcut to the VPN program, then use the shortcut to access the settings and select the **run as administrator** check box. Then every time you use this shortcut, OpenVPN automatically runs with administrator privileges.

2. Right-click the **OpenVPN** icon.

A menu displays:



3. Select **Connect**.

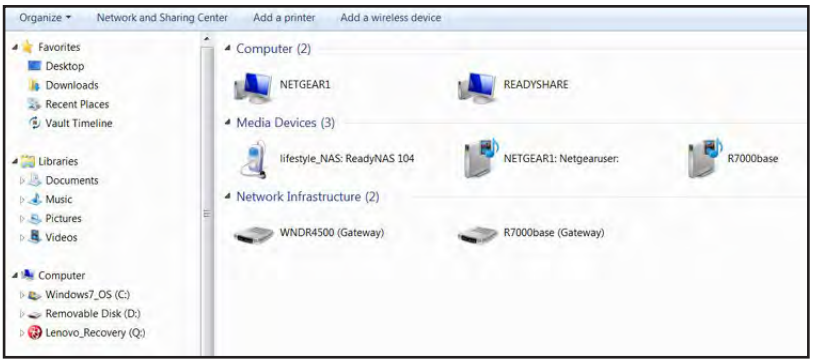
   The VPN connection is established. You can do the following:

   - Launch an Internet browser and log in to your router.
   - Use Windows file manager to access the router's USB drive and download files.

Use VPN to Access the Router's USB Drive and Media

➢ **To access the router's USB drive and download files:**

1. In Windows file manager, select the **Network** folder.



   The network resources display. The ReadySHARE icon is in the Computer section and the remote R7000 icon is in the Media Devices section (if DLNA is enabled in the router).

2. If the icons do not display, click the **Refresh** button to update the screen.

   If the local LAN and the remote LAN are using the same IP scheme, the remote R6700 icon does not display in the Media Devices and Network Infrastructure sections.

3. To access the router's USB drive, click the **ReadySHARE** icon.
4. To access media on the router's network, click the **R6700** icon.

Use VPN to Access Your Internet Service at Home

When you're away from home and you access the Internet, you usually use a local Internet service provider. For example, at a coffee shop you might be given a code that lets you use the coffee shop's Internet service account to surf the web.

Nighthawk lets you use a VPN connection to access your own Internet service when you're away from home. You might want to do this if you travel to a geographic location that doesn't support all the Internet services that you use at home. For example, your Netflix account might work at home, but not in a different country.

Set Up VPN Client Internet Access in the Router

By default, the router is set up to allow VPN connections only to your home network, but you can change the setting to allow Internet access. Accessing the Internet remotely through a VPN might be slower than accessing the Internet directly.

➢ **To allow VPN clients to use your home Internet service:**

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 > VPN Service**.

   The VPN screen displays.
5. Select the **Enable VPN Service** radio button.
6. Scroll down to the Clients will use this VPN connection to access section, and select the **All sites on the Internet & Home Network** radio button.

   When you access the Internet with the VPN connection, instead of using a local Internet service, you use the Internet service from your home network.
7. Click the **Apply** button.

   Your settings are saved.
8. Click the **For Windows** or **For Non Windows** button and download the configuration files for your VPN clients.
9. Unzip the configuration files and copy them to the folder where the VPN client is installed on your device.

For a client device with Windows 64-bit system, the VPN client is installed at `C:\Program files\OpenVPN\config\` by default.

Block VPN Client Internet Access in the Router

By default, the router is set up to allow VPN connections only to your home network, not to the Internet service for your home network. If you changed this setting to allow Internet access, you can change it back.

➢ **To allow VPN clients to access only your home network:**

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 > VPN Service**.

   The VNP screen displays.
5. Select the **Enable VPN Service** radio button.
6. Scroll down to the Clients will use this VPN connection to access section and select the **Home Network only** radio button.

   This is the default setting. The VPN connection is only to your home network, not to the Internet service for your home network.
7. Click the **Apply** button.

   Your settings are saved.
8. Click the **For Windows** or **For Non Windows** button and download the configuration files for your VPN clients.
9. Unzip the configuration files and copy them to the folder where the VPN client is installed on your device.

   For a client device with Windows 64-bit system, the VPN client is installed at `C:\Program files\OpenVPN\config\` by default.

Use a VPN Tunnel to Access Your Internet Service at Home

➢ **To access your Internet service:**

1. Set up the router to allow VPN access to your Internet service.

   See *Set Up VPN Client Internet Access in the Router* on page 155.

2. On your computer, launch the OpenVPN application.

   The **OpenVPN** icon displays in the Windows taskbar.
3. Right-click the icon, and select **Connect**.
4. When the VPN connection is established, launch your Internet browser.

Specify Internet Port Settings

13

You can use port forwarding and port triggering to set up rules for Internet traffic. You need networking knowledge to set up these features.

This chapter includes the following sections:

- *Set Up Port Forwarding to a Local Server*
- *Set Up Port Triggering*

Set Up Port Forwarding to a Local Server

If your home network includes a server, you can allow certain types of incoming traffic to reach the server. For example, you might want to make a local web server, FTP server, or game server visible and available to the Internet.

The router can forward incoming traffic with specific protocols to computers on your local network. You can specify the servers for applications and you can also specify a default DMZ server to which the router forwards all other incoming protocols.

➢ **To forward specific incoming protocols:**

1. Decide which type of service, application, or game you want to provide.
2. Find the local IP address of the computer on your network that will provide the service.

   You can usually find this information by contacting the publisher of the application or user groups or news groups.

   The server computer must always use the same IP address. Assign the server computer a reserved IP address. See *Reserve LAN IP Addresses* on page 111.
3. Launch an Internet browser from a computer or wireless device that is connected to the network.
4. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
5. 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.
6. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

7. Leave the **Port Forwarding** radio button selected as the service type.
8. In the **Service Name** list, select the service name.

   If the service that you want to add is not in the list, create a custom service. See *Add a Custom Port Forwarding Service* on page 160.

9. In the **Server IP Address** field, enter the IP address of the computer that will provide the service.
10. Click the **Add** button.

    The service displays in the list.

Add a Custom Port Forwarding Service

➢ **To add a custom service:**

1. Find out which port number or range of numbers the application uses.

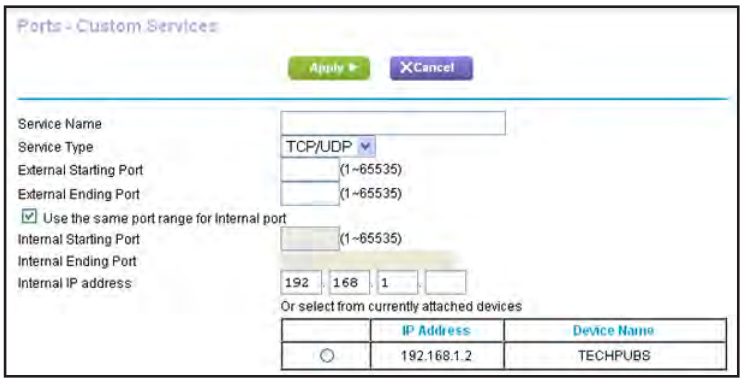
   You can usually find this information by contacting the publisher of the application or user groups or news groups.
2. Launch an Internet browser from a computer or wireless device that is connected to the network.
3. Type **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
4. 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.
5. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.
6. Leave the **Port Forwarding** radio button selected as the service type.
7. Click the **Add Custom Service** button.



8. In the **Service Name** field, enter a descriptive name.
9. In the **Service Type** field, select the protocol.

   If you are unsure, select **TCP/UDP**.
10. In the **External Starting Port** field, enter the beginning port number.

11. If the application uses a single port, enter the same port number in the **External Ending Port** field.

    If the application uses a range of ports, enter the ending port number of the range in the **External Ending Port** field.

12. Specify the internal ports by one of these methods:
    - Leave the **Use the same port range for Internal port** check box selected.
    - Type the port numbers in the **Internal Starting Port** and **Internal Ending Port** fields.
13. In the **Internal IP address** field, type the IP address or select the radio button for an attached device listed in the table.
14. Click the **Apply** button.

    The service is now in the list on the Port Forwarding/Port Triggering screen.

Edit a Port Forwarding Service

➢ **To edit a port forwarding entry:**

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 > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.
5. Leave the **Port Forwarding** radio button selected as the service type.
6. In the table, select the radio button next to the service name.
7. Click the **Edit Service** button.

   The Ports - Custom Services screen displays.
8. Change the settings as needed.
9. Click the **Apply** button.

   Your changes are saved.

Delete a Port Forwarding Entry

➢ **To delete a port forwarding entry:**

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 > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.
5. Select the **Port Forwarding** radio button as the service type.
6. In the table, select the radio button next to the service name.
7. Click the **Delete Service** button.

   The service is deleted.

Application Example: Make a Local Web Server Public

If you host a web server on your local network, you can use port forwarding to allow web requests from anyone on the Internet to reach your web server.

➢ **To make a local web server public:**

1. Assign your web server either a fixed IP address or a dynamic IP address using DHCP address reservation.

   In this example, your router always gives your web server an IP address of 192.168.1.33.
2. In the Port Forwarding/Port Triggering screen, configure the router to forward the HTTP service to the local address of your web server at **192.168.1.33**.

   HTTP (port 80) is the standard protocol for web servers.
3. (Optional) Register a host name with a Dynamic DNS service, and specify that name in the Dynamic DNS screen of the router.

   Dynamic DNS makes it much easier to access a server from the Internet because you can type the name in the Internet browser. Otherwise, you must know the IP address that the ISP assigned, which typically changes.

How the Router Implements the Port Forwarding Rule

The following sequence shows the effects of a port forwarding rule:

1. When you type the URL www.example.com in your browser, the browser sends a web page request message with the following destination information:
   - **Destination address**. The IP address of www.example.com, which is the address of your router.
   - **Destination port number**. 80, which is the standard port number for a web server process.
2. Your router receives the message and finds your port forwarding rule for incoming port 80 traffic.
3. The router changes the destination in the message to IP address 192.168.1.123 and sends the message to that computer.
4. Your web server at IP address 192.168.1.123 receives the request and sends a reply message to your router.
5. Your router performs Network Address Translation (NAT) on the source IP address, and sends the reply through the Internet to the computer or wireless device that sent the web page request.

Set Up Port Triggering

Port triggering is a dynamic extension of port forwarding that is useful in these cases:

- An application must use port forwarding to more than one local computer (but not simultaneously).
- An application must open incoming ports that are different from the outgoing port.

With port triggering, the router monitors traffic to the Internet from an outbound “trigger” port that you specify. For outbound traffic from that port, the router saves the IP address of the computer that sent the traffic. The router temporarily opens the incoming port or ports that you specify in your rule and forwards that incoming traffic to that destination.

Port forwarding creates a static mapping of a port number or range of ports to a single local computer. Port triggering can dynamically open ports to any computer when needed and close the ports when they are no longer needed.

Note: If you use applications such as multiplayer gaming, peer-to-peer connections, real-time communications such as instant messaging, or remote assistance (a feature in Windows XP), enable Universal Plug and Play (UPnP). See *Improve Network Connections with Universal Plug and Play* on page 53.

Add a Port Triggering Service

➢ **To add a port triggering service:**

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.

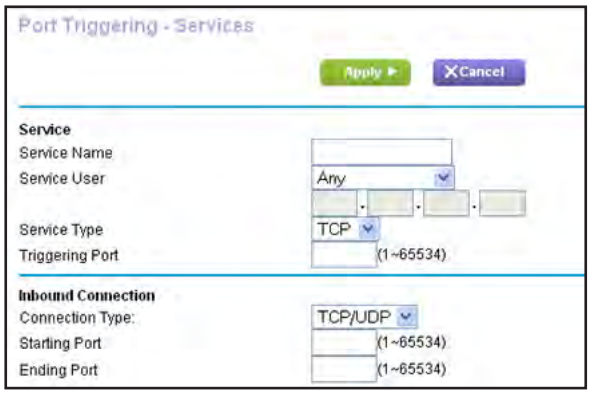
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.

5. Select the **Port Triggering** radio button.
6. Click the **Add Service** button.



7. In the **Service Name** field, type a descriptive service name.
8. From the **Service User** list, select a user option:
   - **Any** (the default) allows any computer on the Internet to use this service.
   - **Single address** restricts the service to a particular computer.
9. From the **Service Type** list, select **TCP** or **UDP** or **TCP/UDP** (both).

   If you are not sure, select **TCP/UDP**.

10. In the **Triggering Port** field, enter the number of the outbound traffic port that will open the inbound ports.
11. In the **Connection Type**, **Starting Port**, and **Ending Port** fields, enter the inbound connection port information.
12. Click the **Apply** button.

    The service is added. You must enable port triggering before the router uses port triggering for the service that you added. See *Enable Port Triggering* on page 165.

Enable Port Triggering

➢ **To enable port triggering:**

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 > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.
5. Select the **Port Triggering** radio button.

6. Clear the **Disable Port Triggering** check box.

   If this check box is selected, the router does not use port triggering even if you have specified port triggering settings.
7. In the **Port Triggering Timeout** field, enter a value up to 9999 minutes.

   This value controls how long the inbound ports stay open when the router detects no activity. This value is required because the router cannot detect when the application terminates.

Application Example: Port Triggering for Internet Relay Chat

Some application servers, such as FTP and IRC servers, send replies to multiple port numbers. Using port triggering, you can tell the router to open more incoming ports when a particular outgoing port starts a session.

An example is Internet Relay Chat (IRC). Your computer connects to an IRC server at destination port 6667. The IRC server not only responds to your originating source port, but

also sends an “identify” message to your computer on port 113. Using port triggering, you can tell the router, “When you initiate a session with destination port 6667, you must also allow incoming traffic on port 113 to reach the originating computer.” The following sequence shows the effects of this port triggering rule:

1. You open an IRC client program to start a chat session on your computer.
2. Your IRC client composes a request message to an IRC server using a destination port number of 6667, the standard port number for an IRC server process. Your computer then sends this request message to your router.
3. Your router creates an entry in its internal session table describing this communication session between your computer and the IRC server. Your router stores the original information, performs Network Address Translation (NAT) on the source address and port, and sends this request message through the Internet to the IRC server.
4. Noting your port triggering rule and observing the destination port number of 6667, your router creates another session entry to send any incoming port 113 traffic to your computer.
5. The IRC server sends a return message to your router using the NAT-assigned source port (for example, port 33333) as the destination port and sends an “identify” message to your router with destination port 113.
6. When your router receives the incoming message to destination port 33333, it checks its session table to see if a session is active for port number 33333. Finding an active session, the router restores the original address information replaced by NAT and sends this reply message to your computer.
7. When your router receives the incoming message to destination port 113, it checks its session table and finds an active session for port 113 associated with your computer. The router replaces the message’s destination IP address with your computer’s IP address and forwards the message to your computer.
8. When you finish your chat session, your router eventually senses a period of inactivity in the communications. The router then removes the session information from its session table, and incoming traffic is no longer accepted on port numbers 33333 or 113.

Troubleshooting

14

This chapter provides information to help you diagnose and solve problems you might experience with your router. If you do not find the solution here, check the NETGEAR support site at *http://support.netgear.com* for product and contact information.

This chapter contains the following sections:

- *Quick Tips*
- *Troubleshoot with the LEDs*
- *Cannot Log In to the Router*
- *Cannot Access the Internet*
- *Changes Not Saved*
- *Wireless Connectivity*
- *Troubleshoot Your Network Using the Ping Utility*

Quick Tips

See the following for tips for troubleshooting some common problems:

- *Sequence to Restart Your Network* on page 168
- *Check Ethernet Cable Connections* on page 168
- *Wireless Settings* on page 168
- *Network Settings* on page 168

Sequence to Restart Your Network

When you must to restart your network, follow this sequence:

1. Turn off *and* unplug the modem.
2. Turn off the router.
3. Plug in the modem and turn it on. Wait two minutes.
4. Turn on the router and wait two minutes.

Check Ethernet Cable Connections

If your device does not power on, make sure that the Ethernet cables are securely plugged in. The Internet LED on the router is lit if the Ethernet cable connecting the router and the modem is plugged in securely and the modem and router are turned on. If one or more powered-on computers are connected to the router by an Ethernet cable, the corresponding numbered router LAN port LEDs light.

Wireless Settings

Make sure that the wireless settings in the computer and router match exactly. The wireless network name (SSID) and wireless security settings of the router and wireless computer must match exactly.

If you set up an access list in the Advanced Wireless Settings screen, you must add each wireless computer's MAC address to the router's access list.

Network Settings

Make sure that the network settings of the computer are correct. Wired and wirelessly connected computers must use network (IP) addresses on the same network as the router. The simplest way to do this is to configure each computer to obtain an IP address automatically using DHCP.

Some cable modem service providers require you to use the MAC address of the computer initially registered on the account. You can view the MAC address in the Attached Devices screen.

Troubleshoot with the LEDs

By default, the router is set with standard LED settings. If you disabled blinking for the LEDs or turned off all LEDs except the Power LED, you must return the LEDs to their standard settings for troubleshooting. For information about controlling the LED settings, see *Disable LED Blinking or Turn Off LEDs* on page 104.

Standard LED Behavior When the Router Is Powered On

After you turn on power to the router, the following sequence of events occurs:

1. When power is first applied, verify that the Power LED is lit.
2. After approximately 30 seconds, verify the following:
   - The Power LED is solid white.
   - The Internet LED is lit.
   - The WiFi LED is lit unless you turned off the wireless radio.

You can use the LEDs on the front panel of the router for troubleshooting.

Power LED Is Off or Blinking

Is the Power LED is off or blinking, try the following:

- Make sure that the power adapter is securely connected to your router and securely connected to a working power outlet.
- Check that you are using the power adapter that NETGEAR supplied for this product.
- If the Power LED blinks slowly and continuously, the router firmware is corrupted. This can happen if a firmware upgrade is interrupted or if the router detects a problem with the firmware. If the error persists, a hardware problem exists. For recovery instructions, or help with a hardware problem, contact technical support at *www.netgear.com/support.*

Power LED Stays Amber

When the router is powered on, the Power LED lights amber for about 20 seconds and then lights white. If the LED does not turn white, the router is experiencing a problem.

If the Power LED is still amber one minute after you turn on power to the router, do the following:

1. Turn off the power and then turn it back on to see if the router recovers.
2. Press and hold the **Reset** button to return the router to its factory settings.

   See *Factory Settings* on page 178.

If the error persists, you might be experiencing a hardware problem. Contact technical support at *www.netgear.com/support.*

LEDs Never Turn Off

When the router is turned on, the LEDs light for about 10 seconds and then turn off. If all the LEDs stay on, this indicates a fault within the router.

If all LEDs are still lit one minute after power-up, do the following:

- Cycle the power to see if the router recovers.
- Press and hold the **Reset** button to return the router to its factory settings. For more information, see *Factory Settings* on page 178.

If the error persists, you might be experiencing a hardware problem. Contact technical support at *www.netgear.com/support*.

Internet or Ethernet Port LEDs Are Off

If either the Ethernet port LEDs or the Internet LED does not light when the Ethernet connection is made, check the following:

- Make sure that the Ethernet cable connections are secure at the router and at the modem or computer.
- Make sure that power is turned on to the connected modem or computer.
- Be sure that you are using the correct cable.

  When connecting the router's Internet port to a cable or DSL modem, use the cable that was supplied with the cable or DSL modem. This cable can be a standard straight-through Ethernet cable or an Ethernet crossover cable.

WiFi LED Is Off

If the WiFi LED stays off, check to see if the **WiFi On/Off** button on the router was pressed. This button turns the wireless radios in the router on and off. The WiFi LED is lit when the wireless radios are turned on.

Cannot Log In to the Router

If you are unable to log in to the router from a computer on your local network, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the router.
- Make sure that the IP address of your computer is on the same subnet as the router. If you are using the recommended addressing scheme, your computer's address is in the range of 192.168.1.2 to 192.168.1.254.
- If your computer's IP address is shown as 169.254.x.x, recent versions of Windows and Mac OS generate and assign an IP address if the computer cannot reach a DHCP server. These autogenerated addresses are in the range of 169.254.x.x. If your IP address is in

this range, check the connection from the computer to the router, and reboot your computer.

- If your router's IP address was changed and you do not know the current IP address, clear the router's configuration to factory defaults. This sets the router's IP address to 192.168.1.1. For more information, see *Factory Settings* on page 178.
- Make sure that Java, JavaScript, or ActiveX is enabled in your browser. If you are using Internet Explorer, click the **Refresh** button to be sure that the Java applet is loaded.
- Try quitting the browser and launching it again.
- Make sure that you are using the correct login information. The user name is **admin**, and the default password is **password**. Make sure that Caps Lock is off when you enter this information.
- If you are attempting to set up your NETGEAR behind an existing router in your network, use bridge mode or set up the router as an access point.
- If you are attempting to set up your NETGEAR router as a replacement for an ADSL gateway in your network, the router cannot perform many gateway services. For example, the router cannot convert ADSL or cable data into Ethernet networking information. NETGEAR does not support such a configuration.

Cannot Access the Internet

If you can access your router but not the Internet, check to see if the router can obtain an IP address from your Internet service provider (ISP). Unless your ISP provides a fixed IP address, your router requests an IP address from the ISP. You can determine whether the request was successful using the Router Status screen.

➢ **To check the WAN IP 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. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.
5. Check that an IP address is shown for the Internet port. If 0.0.0.0 is shown, your router did not obtain an IP address from your ISP.

If your router cannot obtain an IP address from the ISP, you might need to force your cable or DSL modem to recognize your new router by restarting your network. For more information, see *Sequence to Restart Your Network* on page 168.

If your router is still unable to obtain an IP address from the ISP, the problem might be one of the following:

- Your Internet service provider (ISP) might require a login program.
  Ask your ISP whether they require PPP over Ethernet (PPPoE) or some other type of login.
- If your ISP requires a login, the login name and password might be set incorrectly.
- Your ISP might check for your computer's host name.
  Assign the computer host name of your ISP account as the account name in the Internet Setup screen.
- If your ISP allows only one Ethernet MAC address to connect to Internet and checks for your computer's MAC address do one of the following:
  - Inform your ISP that you have bought a new network device, and ask them to use the router's MAC address.
  - Configure your router to clone your computer's MAC address.

If your router was assigned an IP address but your computer does not load any web pages from the Internet, it might be due to one or more of the following reasons:

- Your computer might not recognize any DNS server addresses.

  A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically, your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, reboot your computer, and verify the DNS address. You can configure your computer manually with DNS addresses, as explained in your operating system documentation.

- The router might not be configured as the TCP/IP gateway on your computer.

  If your computer obtains its information from the router by DHCP, reboot the computer, and verify the gateway address.

- You might be running login software that is no longer needed.

  If your ISP provided a program to log you in to the Internet (such as WinPoET), you no longer need to run that software after installing your router. You might need to go to Internet Explorer and select **Tools > Internet Options**, click the **Connections** tab, and select the **Never dial a connection** radio button.

Troubleshoot PPPoE

If you are using PPPoE, try troubleshooting your Internet connection.

➢ **To troubleshoot a PPPoE 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. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.

5. Click the **Connection Status** button.

   The Connection Status screen displays.

6. Check the Connection Status screen to see if your PPPoE connection is working.

   If you are not connected, click the **Connect** button.

   The router continues to attempt to connect indefinitely.

7. If you cannot connect after several minutes, the router might be set up with an incorrect service name, user name, or password, or your ISP might be experiencing a provisioning problem.

Unless you connect manually, the router does not authenticate using PPPoE until data is transmitted to the network.

Troubleshoot Internet Browsing

If your router can obtain an IP address but your computer is unable to load any web pages from the Internet, check the following:

- Your computer might not recognize any DNS server addresses. A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses.

  Typically, your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, restart your computer.

  Alternatively, you can configure your computer manually with a DNS address, as explained in the documentation for your computer.

- The router might not be configured as the default gateway on your computer.

  Reboot the computer and verify that the router address (www.routerlogin.net) is listed by your computer as the default gateway address.

- You might be running login software that is no longer needed. If your ISP provided a program to log you in to the Internet (such as WinPoET), you no longer need to run that software after installing your router. You might need to go to Internet Explorer and select **Tools > Internet Options**, click the **Connections** tab, and select the **Never dial a connection** radio button.

Changes Not Saved

If the router does not save the changes you make in the router interface, do the following:

- When entering configuration settings, always click the **Apply** button before moving to another screen or tab or your changes are lost.
- Click the **Refresh** or **Reload** button in the web browser. It is possible that the changes were made, but the old settings are in the web browser's cache.

Wireless Connectivity

If you are experiencing trouble connecting wirelessly to the router, try to isolate the problem:

- Does the wireless device or computer that you are using find your wireless network?

  If not, check the WiFi LED on the front of the router. If it is off, you can press the **WiFi On/Off** button on the router to turn the router wireless radios back on.

  If you disabled the router's SSID broadcast, then your wireless network is hidden and does not display in your wireless client's scanning list. (By default, SSID broadcast is enabled.)
- Does your wireless device support the security that you are using for your wireless network (WPA or WPA2)?
- If you want to view the wireless settings for the router, use an Ethernet cable to connect a computer to a LAN port on the router. Then log in to the router and select **BASIC > Wireless**.

  Note: Be sure to click the **Apply** button if you change settings.

If your wireless device finds your network, but the signal strength is weak, check these conditions:

- Is your router too far from your computer or too close? Place your computer near the router, but at least 6 feet (1.8 meters) away and see whether the signal strength improves.
- Are objects between the router and your computer blocking the wireless signal?

Troubleshoot Your Network Using the Ping Utility

Most network devices and routers contain a ping utility that sends an echo request packet to the designated device. The device then responds with an echo reply. You can easily troubleshoot a network using the ping utility in your computer or workstation.

Test the LAN Path to Your Router

You can ping the router from your computer to verify that the LAN path to your router is set up correctly.

➢ **To ping the router from a Windows computer:**

1. From the Windows toolbar, click **Start** and select **Run**.
2. In the field provided, type **ping** followed by the IP address of the router, as in this example:

   ping www.routerlogin.net
3. Click the **OK** button.

   You should see a message like this one:

   ```
   Pinging <IP address > with 32 bytes of data
   ```

   If the path is working, you see this message:

   ```
   Reply from < IP address >: bytes=32 time=NN ms TTL=xxx
   ```

   If the path is not working, you see this message:

   ```
   Request timed out
   ```

If the path is not functioning correctly, you might be experiencing one of the following problems:

- Wrong physical connections

  For a wired connection, make sure that the numbered LAN port LED is lit for the port to which you are connected.

  Check that the appropriate LEDs are lit for your network devices. If your router and computer are connected to a separate Ethernet switch, make sure that the link LEDs are lit for the switch ports that are connected to your computer and router.
- Wrong network configuration

  Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.

  Verify that the IP address for your router and your computer are correct and that the addresses are on the same subnet.

Test the Path from Your Computer to a Remote Device

After verifying that the LAN path works correctly, test the path from your computer to a remote device.

1. From the Windows toolbar, click the **Start** button and select **Run**.
2. In the field provided, type:

   ping -n 10 *<IP address>*

where <IP address> is the IP address of a remote device such as your ISP DNS server.

If the path is functioning correctly, messages display that are similar to those shown in *Test the LAN Path to Your Router* on page 175.

If you do not receive replies, check the following:

- Check that the IP address of your router is listed on your computer as the default gateway. If DHCP assigns the IP configuration of your computers, this information is not visible in your computer Network Control Panel. Verify that the IP address of the router is listed as the default gateway.
- Check to see that the network address of your computer (the portion of the IP address specified by the subnet mask) is different from the network address of the remote device.
- Check that your cable or DSL modem is connected and functioning.
- If your ISP assigned a host name to your computer, enter that host name as the account name in the Internet Setup screen.
- Your ISP might be rejecting the Ethernet MAC addresses of all but one of your computers.

  Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem. Some ISPs additionally restrict access to the MAC address of a single computer connected to that modem. If your ISP does this, configure your router to “clone” or “spoof” the MAC address from the authorized computer.

Supplemental Information

A

This appendix includes technical information about your router.

This appendix covers the following topics:

- *Factory Settings*
- *Technical Specifications*

Factory Settings

You can return the router to its factory settings. Use the end of a paper clip or a similar object to press and hold the **Reset** button on the back of the router for at least seven seconds. The router resets, and returns to the factory configuration settings shown in the following table.

Table 3. Factory default settings

Feature		Default behavior
Router login	User login URL	www.routerlogin.com or www.routerlogin.net
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password
Internet connection	WAN MAC address	Use default hardware address
	WAN MTU size	1500
	Port speed	AutoSensing
Local network (LAN)	LAN IP	192.168.1.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.1.2 to 192.168.1.254
	Time zone	Pacific time
	DHCP starting IP address	192.168.1.2
	DHCP ending IP address	192.168.1.254
	DMZ	Disabled
	Time zone	GMT for WW except NA and GR, GMT+1 for GR, GMT-8 for NA
	Time zone adjusted for daylight savings time	Disabled
	SNMP	Disabled
Firewall	Inbound (communications coming in from the Internet)	Disabled (except traffic on port 80, the HTTP port)
	Outbound (communications going out to the Internet)	Enabled (all)
	Source MAC filtering	Disabled

Table 3. Factory default settings (continued)

Feature		Default behavior
Wireless	Wireless communication	Enabled
	SSID name	See router label
	Security	WPA2-PSK (AES)
	Broadcast SSID	Enabled
	Transmission speed	Auto*
	Country/region	United States in the US; otherwise varies by region
	RF channel	6 until region selected
	Operating mode	Up to 450 Mbps at 2.4 GHz, 1300 Mbps at 5 GHz

**. Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.*

Technical Specifications

Table 4. R6700 router specifications

Feature	Description
Data and routing protocols	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE, PPTP, Bigpond, Dynamic DNS, UPnP, and SMB
Power adapter	• North America: 120V, 60 Hz, input • All regions (output): 12V/3.5A DC output
Dimensions	Dimensions: 280 mm x 182 mm x 49 mm (11 in. x 7.17 in. x 1.9 in.)
Weight	Weight: 430 g (0.94 lb)
Operating temperature	0° to 40°C (32º to 104ºF)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15 Class B VCCI Class B EN 55 022 (CISPR 22), Class B C-Tick N10947
LAN	10BASE-T or 100BASE-TX or 1000BASE-T, RJ-45
WAN	10BASE-T or 100BASE-TX or 1000BASE-T, RJ-45
Wireless	Maximum wireless signal rate complies with the IEEE 802.11 standard.*
Radio data rates	Auto Rate Sensing
Data encoding standards	IEEE 802.11ac 2.0 IEEE 802.11n version 2.0 IEEE @ 802.11 b/g/n 2.4 GHz IEEE @ 802.11 a/n/ac 5.0 GHz
Maximum computers per wireless network	Limited by the amount of wireless network traffic generated by each node (typically 50–70 nodes).
Operating frequency range	2.4 GHz 2.412–2.462 GHz (US) 2.412–2.472 GHz (Japan) 2.412–2.472 GHz (Europe ETSI) 5 GHz 5.18–5.24 + 5.745–5.825 GHz (US) 5.18–5.24 GHz (Europe ETSI)
802.11 security	WPA-PSK, WPA2-PSK, and WPA/WPA2

**. 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 orimplied 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. Up to 1300 Mbpswireless speeds achieved when connecting to other 802.11ac 1300 Mbps devices.*