

NETGEAR[®]

Nighthawk X4 AC3200 WiFi Cable Modem Router

User Manual

Model C7500

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350 E. Plumeria Drive
San Jose, CA 95134
USA

Nighthawk X4 AC3200 WiFi Cable Modem Router

Support

Thank you for purchasing this NETGEAR product.

You can visit www.netgear.com/support to register your product, get help, access the latest downloads and user manuals, and join our community. We recommend that you use only official NETGEAR support resources. Contact your Internet service provider for technical support.

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Compliance

For regulatory compliance information, visit <http://www.netgear.com/about/regulatory>. See the regulatory compliance document before connecting the power supply.

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This chapter covers the following topics:

- *Unpack Your Modem Router*
- *Top and Front Panel*
- *LEDs*
- *Rear Panel*
- *Label*
- *System Requirements*
- *Position Your Modem Router*
- *Install and Activate Your Modem Router*
- *Connect Your Modem Router to a Router After Installation and Activation*

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

Unpack Your Modem Router

Your package contains the following items.



Figure 1. Package contents

1. Nighthawk X4 AC3200 WiFi Cable Modem Router (Model C7500)
2. Ethernet cable
3. Power adapter

Top and Front Panel

Status LEDs are located on the top of the modem router. Buttons are located on the front. USB ports 1 and 2 are located on the side.



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LEDs

You can use the LEDs to verify status and connections. The following table lists and describes each LED on the top panel of the modem router.

Table 1. LED descriptions

LED	Description
Power 	<ul style="list-style-type: none">• Solid White. Power is supplied to the modem router.• Off. No power is supplied to the modem router.• Solid red. Thermal cutoff mode. Power off the modem router, let it cool, and move it away from heat sources (such as a TV, DVD player, or speakers).
Downstream 	<ul style="list-style-type: none">• Solid amber. One downstream channel is locked.• Solid white. Two or more downstream channels are locked.• Blinking white. The modem router is scanning for a downstream channel.• Off. No downstream channel is locked.
Upstream 	<ul style="list-style-type: none">• Solid amber. One upstream channel is locked.• Solid white. Two or more upstream channels are locked.• Blinking white. The modem router is scanning for an upstream channel.• Off. No upstream channel is locked.
Internet 	<ul style="list-style-type: none">• Solid white. The modem router is online.• Blinking white. The modem router is synchronizing with the cable provider's cable modem termination system (CMTS).• Slow blinking amber and white. The modem router reached the traffic meter limit.• Off. The modem router is offline.
2.4 GHz radio 	<ul style="list-style-type: none">• Solid white. The 2.4 GHz WiFi radio is operating.• Blinking. The router is sending or receiving WiFi traffic.• Off. The 2.4 GHz WiFi radio is off.
5 GHz radio 	<ul style="list-style-type: none">• Solid white. The 5 GHz WiFi radio is operating.• Blinking. The router is sending or receiving WiFi traffic.• Off. The 5 GHz WiFi radio is off.

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Table 1. LED descriptions (Continued)

USB 1 and USB 2  	<ul style="list-style-type: none"> • Solid white. A USB device is connected and is ready. • Off. No USB device is connected, or someone clicked the Safely Remove Hardware button and it is now safe to remove the attached USB device.
Ethernet 1 2 3 4	<p>The LED color indicates the speed: white for Gigabit Ethernet connections and amber for 100 Mbps or 10 Mbps Ethernet connections.</p> <ul style="list-style-type: none"> • Solid. A powered-on device is connected to the Ethernet port. • Blinking. The port is sending or receiving traffic. • Off. No device is connected to this Ethernet port.

The following buttons are located on the front of the modem router:

- **LED.** Pressing this button turns the modem router LEDs off and on.
- **WPS.** This button lets you use WPS to join the WiFi network without typing the WiFi password. The WPS LED blinks during this process and then lights solid.
- **WiFi.** Pressing this button for two seconds turns the WiFi radios in the modem router on and off. If this LED is lit, the WiFi radios are on. If this LED is off, the WiFi radios are turned off and you cannot use WiFi to connect to the modem router.

Button	Description
LED	Pressing this button changes the LED mode: <ul style="list-style-type: none"> • Mode one. All LEDs stay on and blink. • Mode two. All LEDs stay on but don't blink. • Mode three. Only the Power LED stays on and the other LEDs are off.

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(Continued)

WPS	Pressing this button lets you use WPS to join the WiFi network without typing the WiFi password.
WiFi	Pressing this button for two seconds turns the 2.4 GHz and 5 GHz WiFi radios on and off.

Rear Panel

The connections and button on the rear panel are shown in the following figure.



Figure 2. Modem router rear panel

Viewed from left to right, the back panel contains the following components:

- **Reset button.** Pressing the **Reset** button resets the modem router. If the **Reset** button is pressed for at least seven seconds and the Power LED blinks white, the modem router returns to its factory settings.
- **Ethernet ports.** Four Gigabit Ethernet RJ-45 LAN ports to connect the modem router to LAN devices.
- **Cable port.** Connect the cable port to a cable wall outlet or a line splitter.
- **DC power connector.** Connect the power adapter that came in the product package to the DC power connector.
- **Power On/Off button.** Press the **Power On/Off** button to provide power to the modem router.

Label

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



Figure 3. Modem router label

System Requirements

You need the following to install your modem router:

- Compatible operating system:
 - Windows® 7
 - Windows 8
 - Windows 10
 - Windows Vista®
 - Windows XP®
 - Windows 2000
 - Mac OS®
 - UNIX®
 - Linux®
- Compatible web browser:
 - Microsoft® Internet Explorer® 5.0 or higher
 - Firefox® 2.0 or higher
 - Safari® 1.4 or higher
 - Google Chrome™ 11.0 or higher
- Cable Internet service

Position Your Modem Router

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

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

Position your modem router according to the following guidelines:

- Place your modem router near the center of the area where your computers and other devices operate, and within line of sight to your WiFi devices.
- Make sure that the modem router is within reach of an AC power outlet and near Ethernet cables for wired computers.
- Place the modem router in an elevated location, minimizing the number walls and ceilings between the modem router and your other devices.
- Place the modem router away from electrical devices such as these:
 - Ceiling fans
 - Home security systems
 - Microwaves
 - Computers
 - Base of a cordless phone
 - 2.4 GHz cordless phone
- Place the modem router away from large metal surfaces, large glass surfaces, and insulated walls, and items such as these:
 - Solid metal doors
 - Aluminum studs
 - Fish tanks
 - Mirrors
 - Brick
 - Concrete

Install and Activate Your Modem Router

The modem router provides a connection between your cable Internet provider's network and your computer, router, or WiFi router.

Connect Your Modem Router to a Computer

During the installation and activation, you must connect the modem router directly to a computer. After installation and activation, you can connect the modem router to a router.

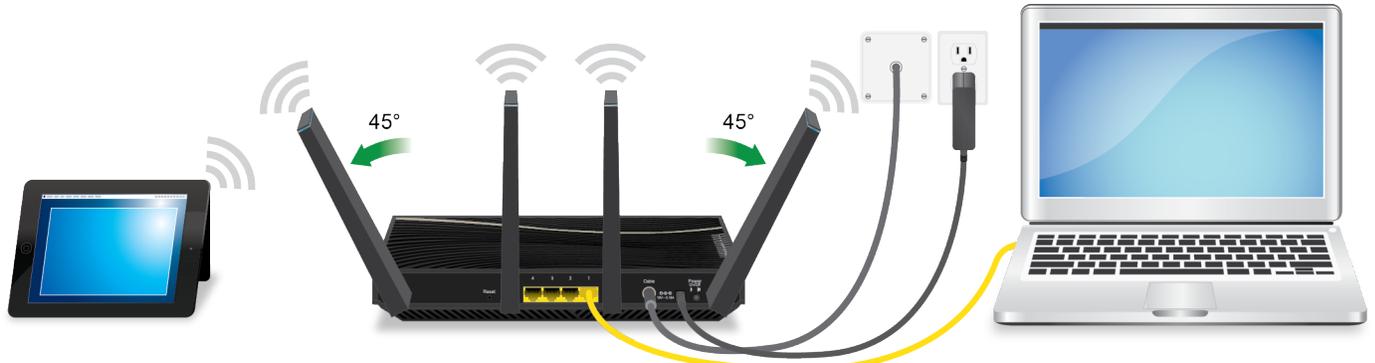


Figure 4. Connect the modem router directly to a computer

Note Before you connect your modem router and contact your cable Internet provider, collect your cable account number, account phone number, and login information (your email address or user name and password).

► To connect your modem router directly to a computer:

1. Connect a coaxial cable.

Use the coaxial cable that your cable company provided to connect the cable port on the modem router to a cable wall outlet or a line splitter. Make sure that the cable is tightly connected.

Note Xfinity recommends connecting your modem router directly to a cable wall outlet.

2. Connect the power adapter provided in the package to the modem router and plug the power adapter into an electrical outlet.
When the startup procedure is complete, the Power LED lights solid white.
If the Power LED does not light, press the **Power On/Off** button on the rear panel of the modem router.
3. Wait for the modem router to come online.
When the modem router comes online, the Internet LED stops blinking and lights solid white.
This process might take up to 10 minutes.
4. Connect a computer or mobile device to the modem router with a WiFi or wired connection:

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- **WiFi.** Use the WiFi network name and password on the modem router label.
- **Wired.** Use an Ethernet cable to connect a computer to an Ethernet port on the modem router.

5. Log in to your modem router.

For more information, see [Log In to the Modem Router](#) on page 20.

Even though an Internet connection is established, Internet service is available only after you set it up with your cable Internet provider.

For information about how to activate your Internet service, see [Activate Your Internet Service](#) on page 15.

Activate Your Internet Service

Before you activate your Internet service, gather the following information:

- Your cable Internet provider account information
- Modem router model number, which is C7500
- Modem router serial number, which is on the modem router label
- Modem router MAC address, which is on the modem router label

Your modem router's serial number and MAC address are on the modem router label.



The following is contact information for cable Internet providers that support your modem router.

Table 2. Cable Internet provider contact information

Cable Internet Provider	Contact Information
Cox	https://www.cox.com/activate 1-800-234-3993
Spectrum	https://activate.spectrum.net/ 1-(833) 267-6094
Xfinity	https://register.xfinity.com https://www.xfinity.com/support/internet/activate-purchased-modem/ 1-800-XFINITY (1-800-934-6489)

Note Your cable Internet provider's contact information might change. You can find the contact information in your monthly Internet service billing statement.

► **To activate your Internet service:**

1. Visit your cable Internet provider's website and follow the onscreen instructions to activate your Internet service.
2. If you are unable to activate your Internet service using the instructions on your cable Internet provider's website, call your cable Internet provider for support.
3. To determine the accurate Internet speed, visit your cable Internet provider's speed test website and perform a speed test. .
If your actual speed is lower than your subscribed speed, contact your cable Internet provider.

Perform a Speed Test

To determine the accurate Internet speed, visit the speed test website of your cable Internet provider and perform a speed test.

If your actual speed is lower than your subscribed speed, contact your cable Internet provider.

Connect Your Modem Router to a Router After Installation and Activation

During the installation and activation, you must connect the modem router directly to a computer. After installation and activation, you can connect the modem router to a router.

If you want to connect your modem router to a router, you must disable NAT. With NAT disabled, to avoid conflicting with the other router on the network, the modem router does not use NAT.

▶ **To disable NAT and connect your modem router to a router after installation and activation:**

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > NAT Mode**.
The NAT page displays.
5. Clear the **Turn NAT On** check box.
6. Click the **Apply** button.
Your settings are saved.
7. Follow the instructions that came with your router or gateway to connect it to the modem router.

Connect to the Network and Access the Modem Router

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This chapter contains the following sections:

- *Connect to the Network*
- *Types of Logins*
- *Log In to the Modem Router*
- *Access the Modem Router With NETGEAR genie App*

Connect to the Network

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

Wired Connection

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

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

1. Make sure that the modem router is receiving power (its Power LED is lit).
2. Connect an Ethernet cable to an Ethernet port on your computer.
3. Connect the other end of the Ethernet cable to one of the numbered Ethernet ports.
Your computer connects to the local area network (LAN). A message might display on your computer screen to notify you that an Ethernet cable is connected.

Find and Select the Modem Router WiFi Network

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

1. Make sure that the modem router is receiving power (its Power LED is lit).
2. On your computer or mobile device, find and select the WiFi network.
The WiFi network name is on the modem router label.
3. Join the WiFi network and enter the WiFi password.
The password is on the modem router label.
Your computer or mobile device connects to the WiFi network.

Use WPS to Connect to the Modem Router WiFi Network

You can connect a WPS-enabled device to the modem router's WiFi network with Wi-Fi Protected Setup (WPS).

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

1. Make sure that the modem router is receiving power (its Power LED is lit).
2. Check the WPS instructions for your WPS-enabled device.
3. Press the **WPS** button on the modem router.
4. Within two minutes, on your WPS-enabled device, press its **WPS** button or follow its instructions for WPS connections.
Your WPS-enabled device connects to the WiFi network.

Types of Logins

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

Types of logins:

- **WiFi network key or password.** Your modem router is preset with a unique WiFi network name (SSID) and password for WiFi access. This information is on the modem router label.

Note Your modem router broadcasts dual-band 2.4 GHz and 5 GHz WiFi signals. The label shows the SSID for the 2.4 GHz signal. For information about 5 GHz WiFi settings, see *Specify Basic WiFi Settings* on page 58.

- **Modem router login.** This logs you in to the modem router web pages as admin from an Internet browser.

Log In to the Modem Router

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

► To log in to the modem router:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Type **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

Note The first time that you log in to the modem router, you are prompted to set the admin password and set up security questions. You must enter these settings before you can access the Internet.

The BASIC Home page displays the status of the Internet connection.

Access the Modem Router With NETGEAR genie App

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

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

To use the genie app to access the modem router:

1. Visit the NETGEAR genie web page at NETGEAR.com/genie.
2. Follow the onscreen instructions to install the app on your smartphone or tablet.
3. Launch the genie app.
The genie app dashboard page displays.

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

This chapter contains the following sections:

- *Specify the Cable Connection Starting Frequency*
- *View Modem Router Initialization*
- *Manually Set Up the Internet Connection*
- *Change the MTU Size*

Specify the Cable Connection Starting Frequency

The starting frequency is automatically generated. For most Internet connections, you do not need to specify this information. If you must enter a starting frequency, contact your Internet provider.

► To change the starting frequency:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Cable Connection**.
The Cable Connection page displays the status of all downstream and upstream channels.
5. Enter the starting frequency.
6. Click the **Apply** button.
Your settings are saved.

View Modem Router Initialization

You can track the initialization procedure of the modem router and get details about the downstream and upstream cable channel. The time is displayed after the modem router is initialized.

The modem router automatically goes through the following steps in the provisioning process:

1. Scans and locks the downstream frequency and then ranges the upstream channels.
2. Obtains a WAN address for the modem router.
3. Connects to the Internet.

► To view the status of the modem router initialization:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Cable Connection**.
The Cable Connection page displays.

The Startup Procedure section displays the initialization progress. The page also displays the status of all downstream and upstream channels. (You must scroll down to view all the channels.) The number of downstream and upstream channels that are locked depends on the number of channels that your Internet provider uses.

Manually Set Up the Internet Connection

In most situations, you do not need to change these settings. We recommend that you use the default settings for DHCP because most cable Internet services provide the IP address through DHCP.

► To specify the Internet connection settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > Internet**.
The Internet Setup page displays.
5. If your Internet connection requires an account name or host name, type it in the **Account Name (If Required)** field.
6. If your Internet connection requires a domain name, type it in the **Domain Name (If Required)** field. For the other sections in this page, the default settings usually work, but you can change them.
7. Select an Internet IP Address radio button:
 - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
 - **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned. The gateway is the ISP modem router to which your modem router connects.
8. Select a Domain Name Server (DNS) Address radio button:
 - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.
 - **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.
9. Click the **Apply** button.
Your settings are saved.

Change the MTU Size

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

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

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

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

► To change the MTU size:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > WAN Setup**.
The WAN Setup page displays.
5. In the **MTU Size** field, enter a value from 64 to 1500.
6. Click the **Apply** button.
Your settings are saved.

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

Table 3. Common MTU sizes

MTU	Application
1500	The largest Ethernet packet size. This setting is typical for connections that do not use PPPoE or VPN, and is the default value for NETGEAR routers, adapters, and switches.
1492	Used in PPPoE environments.
1472	Maximum size to use for pinging. (Larger packets are fragmented.)
1468	Used in some DHCP environments.
1460	Usable by AOL if you do not send or receive large email attachments, for example.

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

This chapter includes the following sections:

- *Set Up Parental Controls*
- *Block Access to Your Network*
- *Use Keywords to Block Internet Sites*
- *Block Services From the Internet*
- *Schedule When to Block Internet Sites and Services*
- *Avoid Blocking on a Trusted Computer*
- *Set Up Security Event Email Notifications*
- *Enable or Disable NAT*

Set Up Parental Controls

To set up Parental Controls, you must download the NETGEAR genie app on your mobile device. For more information about the NETGEAR genie app, visit NETGEAR.com/genie.

After you set up and enable Parental Controls, you can change the web filtering level for each device on the network through the network map page on the genie app.

► To set up Parental Controls:

1. Connect your mobile device to your router's WiFi network.
2. Launch the app store on your mobile device and download the NETGEAR genie app.
3. Launch the NETGEAR genie app.
The dashboard displays.
4. Tap **Parental Controls**.
The Parental Controls page displays.
5. To log in to your OpenDNS account, tap the **LOGIN** button, enter your OpenDNS user name, and tap the **LOGIN** button.
Parental Controls is automatically enabled.
6. To create an OpenDNS account, tap **CREATE ACCOUNT**, fill in the fields, tap the **SIGN UP** button.
Your account is created and Parental Controls is automatically enabled.
For more information about how to setup Parental Controls using the NETGEAR genie app, see the genie Mobile App User Manual, which is available at downloadcenter.netgear.com/.

Block Access to Your Network

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

► To set up access control:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Security > Access Control**.
The Access Control page displays.
5. Select the **Turn on Access Control** check box.
You must select this check box before you can specify an access rule and use the Allow and Block buttons. When this check box is cleared, all devices are allowed to connect, even if the device is in the blocked list.

6. Select an access rule:
 - **Allow all new devices to connect.** With this setting, if you buy a new device, it can access your network. You don't need to enter its MAC address on this page. We recommend that you leave this radio button selected.
 - **Block all new devices from connecting.** With this setting, if you buy a new device, before it can access your network, you must enter its MAC address for an Ethernet connection and its MAC address for a WiFi connection in the allowed list.

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

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

Use Keywords to Block Internet Sites

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

► To block Internet sites:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Security > Block Sites**.
The Block Sites page displays.
5. Select a keyword blocking option:
 - **Never.** Turn off keyword blocking.
 - **Per Schedule.** Turn on keyword blocking according to a schedule that you set. (See *Schedule When to Block Internet Sites and Services* on page 32.)
 - **Always.** Turn on keyword blocking all the time, independent of the Schedule page.
6. In the **Type keyword or domain here** field, enter a keyword or domain that you want to block.
For example:

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- Specify XXX to block `http://www.badstuff.com/xxx.html`.
 - Specify .com if you want to allow only sites with domain suffixes such as .edu or .gov.
 - Enter a period (.) to block all Internet browsing access.
7. Click the **Add Keyword button**.
The keyword is added to the keyword list. The keyword list supports up to 64 entries.
 8. Click the **Apply** button.
Your settings are saved.

Delete a Keyword

To delete keywords from the list:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Security > Block Sites**.
The Block Sites page displays.
5. Do one of the following:
 - To delete a single word, select it and click the **Delete Keyword button**.
The keyword is removed from the list.
 - To delete all keywords on the list, click the **Clear List button**.
All keywords are removed from the list.
6. Click the **Apply** button.
Your settings are saved.

Block Services From the Internet

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

► To block services:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Security > Block Services**.
The Block Services page displays.
5. Specify when to block the services:

- To disable block service, select the **Never** radio button.
 - To block the services all the time, select the **Always** radio button.
 - To block the services based on a schedule, select the **Per Schedule** radio button.
For information about how to specify the schedule, see [Schedule When to Block Internet Sites and Services](#) on page 32.
6. Click the **Add** button.
The Block Services Setup page displays.
 7. To add a service that is in the **Service Type** menu, select the application or service.
The settings for this service automatically display in the fields.
 8. To add a service or application that is not in the menu, select **User Defined**, and do the following:
 - a. If you know that the application uses either TCP or UDP, select the appropriate protocol. Otherwise, select **TCP/UDP** (both) .
 - b. Enter the starting port and ending port numbers.
If the service uses a single port number, enter that number in both fields.

To find out which port numbers the service or application uses, you can contact the publisher of the application, ask user groups or newsgroups, or search on the Internet.
 9. Specify which devices on your LAN are affected by the rule, based on their IP addresses:
 - **Only This IP Address.** Block services for a single computer.
 - **IP Address Range.** Block services for a range of computers with consecutive IP addresses on your network.
 - **All IP Addresses.** Block services for all computers on your network.
 10. Click the **Add** button.
Your settings are saved.

Schedule When to Block Internet Sites and Services

When you schedule blocking, the same schedule is used to block sites and to block services. For information about how to specify what you want the modem router to block, see [Use Keywords to Block Internet Sites](#) on page 29 and [Block Services From the Internet](#) on page 31.

► To schedule blocking:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.

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The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Security > Schedule**.

The Schedule page displays.

5. Specify when to block keywords and services:

- **Days to Block.** Select the check box for each day that you want to block the keywords or select the **Every Day** check box, which automatically selects the check boxes for all days.
- **Time of Day to Block.** Select a start and end time in 24-hour format, or select **All Day** for 24-hour blocking.

6. Click the **Apply** button.

Your settings are saved.

Avoid Blocking on a Trusted Computer

You can exempt one trusted computer from blocking. The computer you exempt must use a fixed IP address. You can use the reserved IP address feature to specify the IP address. See .

► **To specify a trusted computer:**

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.

2. Enter **http://routerlogin.net** or **http://192.168.0.1**.

A login window opens.

3. Enter the modem router admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Security > Block Sites**.

The Block Sites page displays.

5. Scroll down and select the **Allow trusted IP address to visit blocked sites** check box.

6. In the **Trusted IP Address** field, enter the IP address of the trusted computer.

7. Click the **Apply** button.

Your settings are saved.

Set Up Security Event Email Notifications

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

► To set up email notifications:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Security >E-mail**.
The Email page displays.
5. Select the **Turn E-mail Notification On** check box.
6. In the **Your Outgoing Mail Server** field, enter the name of your ISP outgoing (SMTP) mail server (such as mail.myISP.com).
You might be able to find this information in the configuration page of your email program. If you leave this field blank, log and alert messages are not sent.
7. In the **Your Outgoing Mail Server** field, enter the name of your Internet provider's outgoing (SMTP) mail server (such as mail.myISP.com).
You might be able to find this information in the configuration window of your email program. If you leave this field blank, log and alert messages are not sent.
8. In the **Send to This E-mail Address** field, enter the email address to which logs and alerts are to be sent.
This email address is also used for the From address. If this field is blank, log and alert messages are not sent.
9. If your outgoing email server requires authentication, select the **My Mail Server requires authentication** check box, and do the following:
 - a. In the **User Name** field, type the user name for the outgoing email server.
 - b. In the **Password** field, type the password for the outgoing email server.
10. To send alerts when someone attempts to visit a blocked site, select the **Send Alerts Immediately** check box.
11. To send logs based on a schedule, specify these settings:
 - From the **Send logs according to this schedule** menu, select the schedule type.
 - From the **Day** menu, select the day.
 - From the **Time** menu, select the time, and select the **am** or **pm** radio button.
12. Click the **Apply** button.
Your settings are saved.

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

Enable or Disable NAT

Network address translation (NAT) is a method of remapping one IP address space into another by modifying network address information in Internet Protocol (IP) datagram packet headers while they are in transit across a traffic routing device.

► To enable or disable NAT:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > NAT Mode**.
The NAT page displays.
5. Select or clear the **Turn NAT On** check box.
6. Click the **Apply** button.
Your settings are saved.

Share USB Devices Attached to the Modem Router

5

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

This chapter contains the following sections:

- *USB Storage Device Requirements*
- *Connect a USB Storage Device to the Modem Router*
- *Access a USB Drive Connected to the Modem Router From a Windows-Based Computer*
- *Map a USB Device to a Windows Network Drive*
- *Access a USB Storage Device That Is Connected to the Modem Router From a Mac*
- *Control Access to the USB Storage Device*
- *Use FTP Within the Network*
- *View or Change Network Folders on a USB Storage Device*
- *Add a Network Folder on a USB Storage Device*
- *Edit a Network Folder on a USB Storage Device*
- *Approve USB Devices*
- *Access the USB Storage Device Through the Internet*
- *Safely Remove a USB Storage Device*

For more information about ReadySHARE® features, visit netgear.com/readystatechange.

USB Storage Device Requirements

The modem router works with most USB-compliant external flash and hard drives. For the most up-to-date list of USB storage devices that the modem router supports, visit <https://kb.netgear.com/18985>.

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

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

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

Connect a USB Storage Device to the Modem Router

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

► To connect a USB storage device:

1. Insert your USB storage device into the USB port on the modem router.
2. If your USB storage device uses a power supply, connect it.

You must use the power supply when you connect the USB storage device to the modem router.

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

Access a USB Drive Connected to the Modem Router From a Windows-Based Computer

► To access a USB storage device from a Windows-based computer:

1. Connect a USB storage device to a USB port on your router.
2. If your USB storage device uses a power supply, connect it.

You must use the power supply when you connect the USB storage device to the modem router.

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

3. Select **Start > Run**.
4. Enter `\\readyshare` in the dialog box.
5. Click the **OK** button.

A window automatically opens and displays the files and folders on the USB storage device.

Map a USB Device to a Windows Network Drive

► To map a USB device to a Windows network drive:

1. Connect a USB storage device to a USB port on the router.
2. If your USB storage device uses a power supply, connect it.
You must use the power supply when you connect the USB storage device to the modem router.

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

3. Select **Start > Run**.
4. Enter `\\readyshare` in the dialog box.
5. Click the **OK** button.
6. Right-click the USB device and select **Map network drive**.
7. Select the drive letter to map to the new network folder.
8. Click the **Finish** button.

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

9. To connect to the USB storage device as a different user, select the **Connect using different credentials** check box, click the **Finish** button, and do the following:
 - a. Type the user name and password.
 - b. Click the **OK** button.

Access a USB Storage Device That Is Connected to the Modem Router From a Mac

► To access the device from a Mac:

1. Connect a USB storage device to a USB port on your router.
2. If your USB storage device uses a power supply, connect it.
You must use the power supply when you connect the USB storage device to the modem router.

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

3. On a Mac that is connected to the network, select **Go > Connect to Server**.
4. In the **Server Address** field, enter **smb://readyshare**.
5. When prompted, select the **Guest** radio button.
If you set up access control on the router and you allowed your Mac to access the network, select the Registered User radio button and enter admin for the name and password for the password. For more information about access control, see .
6. Click the **Connect** button.
A window automatically opens and displays the files and folders on the USB storage device.

Control Access to the USB Storage Device

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

► To specify the USB access settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. >Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.
The USB Storage (Advanced Settings) page displays.
5. Specify access to the USB storage device:
 - **Network Device Name**. This is the name used to access the USB device connected to the modem router. The default is readyshare.
 - **Workgroup**. If you are using a Windows workgroup rather than a domain, the workgroup name is displayed here. The name works only in an operating system that supports NetBIOS, such as Microsoft Windows.
 - **Access Method**. Select the check boxes for the access methods that you want:
 - **Network Neighborhood/MacShare**. Enabled by default.
 - **HTTP**. Enabled by default. You can type **http://readyshare.routerlogin.net/shares** to access the USB storage device.
 - **HTTP (via Internet)**. Disabled by default. If you enable this feature, remote users can type **http:// <public IP address/shares>** (for example, **http://1.1.10.102/shares**) or a URL domain

Share USB Devices Attached to the Modem Router

name to access the USB storage device over the Internet. This feature supports file uploading only.

- **FTP**. Disabled by default.
- **FTP (via Internet)**. Disabled by default. If you select this check box, remote users can access the USB storage device through FTP over the Internet. This feature supports both downloading and uploading of files.

6. If you changed the settings, click the **Apply** button.
Your settings are saved.

Use FTP Within the Network

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

To set up FTP access:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.
The USB Storage (Advanced Settings) page displays.
5. Select the **FTP** check box.
6. Click the **Apply** button.
Your settings are saved.

View or Change Network Folders on a USB Storage Device

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

► To view or change network folders:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.

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The BASIC Home page displays.

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

The USB Storage (Advanced Settings) page displays.

5. Scroll down to the Available Networks Folder section, and view or adjust the following settings:
 - **Share Name.** If only one device is connected, the default share name is USB_Storage. (Some modem router models include more than one USB port.) You can click the name, or you can type it in the address field of your web browser. If Not Shared is shown, the default share was deleted, and no other share for the root folder exists. Click the link to change this setting.
 - **Read Access and Write Access.** Show the permissions and access controls on the network folder. All-no password (the default) allows all users to access the network folder. The password for admin is the same one that you use to log in to the modem router.
 - **Folder Name.** Full path of the network folder.
 - **Volume Name.** Volume name from the storage device (either USB storage device or HDD).
 - **Total Space and Free Space.** Show the current utilization of the storage device.

Add a Network Folder on a USB Storage Device

You can add network folders on the USB storage device.

► To add a network folder:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > ReadySHARE**.
The USB Storage (Advanced Settings) page displays.
5. Click the **Create Network Folder** button.
The Create network Folder window opens.
If this window does not open, your web browser might be blocking pop-ups. If it is, change the browser settings to allow pop-ups.
6. In the **USB Device** menu, select the USB storage device.
7. Click the **Browse** button and in the **Folder** field, select the folder.
8. In the **Share Name** field, type the name of the share.

9. In the **Read Access** menu and the **Write Access** menu, select the settings that you want.
The user name (account name) for All-no password is guest. The password for admin is the same one that is used to log in to the modem router. By default, it is password.
10. Click the **Apply** button.
Your settings are saved.

Edit a Network Folder on a USB Storage Device

You can edit network folders on the USB storage device.

► To edit a network folder:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > ReadySHARE**.
The USB Storage (Advanced Settings) page displays.
5. Click the **Edit** button.
The Edit Network Folder page displays the same settings shown in the Add a Network Folder page.
6. Change the settings in the fields as needed.
7. Click the **Apply** button.
Your settings are saved.

Approve USB Devices

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

► To approve USB devices:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.

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

The USB Settings page displays.

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

5. Select the **No** radio button.
6. Click the **Approved Devices** button.
The approved and available USB devices display.
7. In the **Available USB Devices** menu, select the drive that you want to approve.
8. Click the **Add** button.
9. Select the **Allow only approved devices** check box.
10. Click the Apply button.
Your settings are saved.
11. To work with another USB device, first click the **Safely Remove USB Device** button for the currently connected USB device.
12. Connect the other USB device, and repeat this process.

Access the USB Storage Device Through the Internet

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

► To access the USB storage device from a remote computer:

1. Launch a web browser on a computer that is not on your home network.
2. Connect to your modem router:
 - To connect with Dynamic DNS, type the DNS name.
To use a Dynamic DNS account, you must enter the account information in the Dynamic DNS page. See .
 - To connect without Dynamic DNS, type the modem router's Internet port IP address.

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

You can use FTP to share files on a USB storage device connected to the modem router.

Set Up FTP Access Through the Internet

► To set up FTP access:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > USB Storage > Advanced Settings**.
The USB Storage (Advanced Settings) page displays.
5. Select the **FTP (via Internet)** check box.
6. Click the **Apply** button.
Your settings are saved.
7. To limit access to the admin user, click the **Edit** button.
The Edit Network Folder page displays.
8. In the **Read Access** menu, select **admin**.
9. In the **Write Access** menu, select **admin**.
10. Click the **Apply** button.
Your settings are saved.

Access the USB Storage Device Through the Internet With FTP

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

► To access the USB storage device with FTP from a remote computer:

1. To download, launch an Internet browser.
2. To upload, use an FTP client such as filezilla.
3. Type **ftp://** and the Internet port IP address in the address field of the browser.
For example, type **ftp://10.1.65.4**.
If you are using Dynamic DNS, type the DNS name.
For example, type **ftp://MyName.mynetgear.com**.
4. When prompted, log in:

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- To log in as admin, in the user name field, type **admin** and in the password field, type the same password that you use to log in to the modem router.
- To log in as guest, in the user name field, enter **guest**.
The guest user name does not require a password. To restrict access to the USB storage device, you can specify that only the admin user can access it. See [Approve USB Devices](#) on page 42.
The files and folders of the USB storage device that your account can access to display. For example, you might see **share/partition1/directory1**.

Safely Remove a USB Storage Device

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

► To remove a USB disk drive safely:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **USB Storage > Basic Settings**.
The USB Storage page displays.
5. Click the **Safely Remove USB Device** button.
This takes the drive offline.
6. Physically disconnect the USB storage device.

The ReadySHARE Printer utility lets you share a USB printer that is connected to a USB port on your modem router. You can share this USB printer among the Windows-based and Mac computers on your network.

For more information about the features available in the NETGEAR USB Control Center, see the *ReadySHARE Printer User Manual*, which is available at <http://downloadcenter.netgear.com>.

This chapter contains the following sections:

- *Install the Printer Driver and Cable the Printer*
- *Download the ReadySHARE Printer Utility*
- *Install the ReadySHARE Printer Utility*
- *Print Using the NETGEAR USB Control Center*

Install the Printer Driver and Cable the Printer

Some USB printer manufacturers (for example, HP and Lexmark) request that you do not connect the USB cable until the installation software prompts you to do so.

► To install the driver and cable the printer:

1. On each computer on your network that shares the USB printer, install the driver software for the USB printer.
If you cannot find the printer driver, contact the printer manufacturer.
2. Use a USB printer cable to connect the USB printer to a modem router USB port.

Download the ReadySHARE Printer Utility

The utility works on Windows-based and Mac computers.

► To download the utility:

1. Visit netgear.com/readysare.
2. Scroll down to the Print From the Comfort of Your Home Network section at the bottom of the page.
3. Click one of the following links:
 - **Download PC installer and get started.** This is the utility for Windows-based computers.
 - **Download Mac installer and get started.** This is the utility for MAC computers.
4. Follow the onscreen instructions to download the ReadySHARE Printer utility setup file and install it.

Install the ReadySHARE Printer Utility

You must install the ReadySHARE Printer utility on each computer that will share the printer. After you install it, the utility displays as NETGEAR USB Control Center on your computer. For more information about how to use the NETGEAR USB Control Center, visit https://www.netgear.com/support/product/ReadySHARE_USB_Printer.aspx.

► To install the utility:

1. If necessary, unzip the ReadySHARE Printer utility setup file.
2. Double-click the ReadySHARE Printer utility setup file that you downloaded.
The InstallShield Wizard opens.
3. Follow the prompts to install NETGEAR USB Control Center.
After the InstallShield Wizard completes the installation, the NETGEAR USB Control Center prompts you to select a language.
4. Select a language from the menu and click the **OK** button.
The NETGEAR USB Control Center opens.

Some firewall software, such as Comodo, blocks NETGEAR USB Control Center from accessing the USB printer. If you do not see the USB printer displayed onscreen, you can disable the firewall temporarily to allow the utility to work.

5. Select the printer and click the **Connect** button.
The printer status changes to Manually connected by *Mycomputer*. Now only the computer that you are using can use this printer.
6. Click the **Disconnect** button.
The status changes to Available. Now all computers on the network can use the printer.
7. To exit the utility, select **System > Exit**.

Print Using the NETGEAR USB Control Center

For each computer, after you click the **Connect** and **Disconnect** buttons once, the utility automatically manages the printing queue and handling. By default, the utility starts automatically whenever you log on to Windows and runs in the background.

► To print a document using the NETGEAR USB Control Center:

1. Click the **NETGEAR USB Control Center** icon .
The NETGEAR USB Control Center page displays.
2. Select a printer and click the **Connect** button.
The printer status changes to Manually connected by *Mycomputer*. Now only the computer that you are using can use this printer.
3. Use the print feature in your application to print your document.
The NETGEAR USB Control Center automatically connects your computer to the USB printer and prints the document. If another computer is already connected to the printer, your print job goes into a queue to wait to be printed.
4. If your document does not print, use the NETGEAR USB Control Center to check the printer status.
5. To release the printer so that all computers on the network can use it, click the **Disconnect** button.
The status changes to Available. Now any computers on the network can use the printer.
6. To exit the utility, select **System > Exit**.

This chapter includes the following sections:

- *View or Change the WAN Settings*
- *Set Up a Default DMZ Server*
- *Change the Modem Router's Device Name*
- *Change the LAN TCP/IP Settings*
- *Specify the IP Addresses That the Modem Router Assigns*
- *Disable the DHCP Server Feature in the Modem Router*
- *Manage LAN IP Addresses*
- *Improve Network Connections With Universal Plug-N-Play*
- *Use the WPS Wizard for WiFi Connections*
- *Specify Basic WiFi Settings*
- *Change the WiFi Security Option*
- *Set Up a Guest Network*
- *Control the WiFi Radios*
- *Set Up a WiFi Schedule*
- *Specify WPS Settings*

View or Change the 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 modem router to respond to a ping to its WAN (Internet) port.

► To view or change the WAN settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > WAN Setup**.
The WAN Setup page displays.
5. View or change the following settings:
 - **Disable IPv4 Firewall Protection.** We recommend that you leave this check box cleared so that the firewall protects your modem router.
 - **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 disabled by default. It 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 50.
 - **Respond to Ping on Internet Port.** This feature allows your modem router to be discovered. Use this feature only as a diagnostic tool or for a specific reason.
 - **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 .
 - **Disable SIP ALG.** Some VoIP applications do not work well with the SIP ALG. Selecting this check box to turn off the SIP ALG might help your VoIP devices to create or accept a call through the modem router.
6. Click the **Apply** button.
Your settings 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 modem 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 modem 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 configured in the Port Forwarding/Port Triggering page. Instead of discarding this traffic, the modem router can 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > WAN Setup**.
The WAN Setup page displays.
5. Select the **Default DMZ Server** check box.
6. Type the IP address.
7. Click the **Apply** button.
Your settings are saved.

Change the Modem Router's Device Name

The modem router's device name is the modem router model number. This device name displays in a file manager when you browse your network.

► **To change the modem router's device name:**

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
5. In the **Device Name** field, type a new name.
6. Click the **Apply** button.
Your settings are saved.

Change the LAN TCP/IP Settings

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

- **LAN IP address.** 192.168.0.1
- **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 these 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
5. In the **IP Address** field, type the IP address.
6. In the **IP Subnet Mask**, type the subnet mask of the modem 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 modem router.
7. Click the **Apply** button.
Your settings are saved.

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

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

Specify the IP Addresses That the Modem Router Assigns

By default, the modem router acts as a Dynamic Host Configuration Protocol (DHCP) server. The modem 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 modem router.

These addresses must be part of the same IP address subnet as the modem router's LAN IP address. Using the default addressing scheme, define a range between 192.168.0.2 and 192.168.0.254, although you can save part of the range for devices with fixed addresses.

► To specify the pool of IP addresses that the modem router assigns:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
5. Make sure that the **Use Router as DHCP Server** check box is selected.
6. Specify the range of IP addresses that the modem 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 modem 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 modem router.
7. Click the **Apply** button.
Your settings are saved.

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

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

Disable the DHCP Server Feature in the Modem Router

By default, the modem router acts as a DHCP server. The modem 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 modem 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 modem router:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
5. Clear the **Use Router as DHCP Server** check box.
6. Click the **Apply** button.
(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 modem router.

Manage 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 modem router's DHCP server. Assign reserved IP addresses to computers or servers that require permanent IP settings.

Reserve an IP Address

► To reserve an IP address:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
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 modem router's LAN subnet, such as 192.168.0.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 page 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 modem router's DHCP server. Reboot the computer, or access its IP configuration and force a DHCP release and renew.

Edit a Reserved IP Address Entry

► To edit a reserved IP address entry:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page 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 settings are saved.

Delete a Reserved IP Address Entry

► To delete a reserved IP address entry:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter `http://routerlogin.net` or `http://192.168.0.1`.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Setup > LAN Setup**.
The LAN Setup page displays.
5. Select the radio button next to the reserved address.
6. Click the **Delete** button.
The address is removed.

Improve Network Connections With Universal Plug-N-Play

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

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

► To enable Universal Plug and Play:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter `http://routerlogin.net` or `http://192.168.0.1`.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > UPnP**.
The UPnP page displays.
5. Select the **Turn UPnP On** check box.
By default, the **Turn UPnP On** check box is selected. UPnP for automatic device configuration can be enabled or disabled. If the Turn UPnP On check box is cleared, the modem router does not allow any device to automatically control modem router resources, such as port forwarding.

6. Type the advertisement period in minutes.
The advertisement period specifies how often the modem router broadcasts its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points receive current device status at the expense of more network traffic. Longer durations can compromise the freshness of the device status, but can significantly reduce network traffic.
7. Type the advertisement time to live in hops.
The time to live for the advertisement is measured in hops (steps) for each UPnP packet sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is 4 hops, which is fine for most home networks. If you notice that some devices are not being updated or reached correctly, it might be necessary to increase this value.
8. Click the **Apply** button.
The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the modem router and which ports (internal and external) that device opened. The UPnP Portmap Table also displays what type of port is open and whether that port is still active for each IP address.
9. To refresh the information in the UPnP Portmap Table, click the **Refresh** button.

Use the WPS Wizard for WiFi Connections

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

► To use the WPS Wizard:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > WPS Wizard**.
A page displays that explains WPS.
5. Click the **Next** button.
The WPS page displays.
6. Select the radio button for the setup method that you want to use:
 - **Push button**. Click the **WPS** button on this page.
 - **PIN Number**. The page 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 computer or mobile device with the network password when it connects. The modem router WPS page displays a confirmation message.

Specify Basic WiFi Settings

The modem 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 modem router label.

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

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 WiFi connection to change the WiFi network name (SSID) or other WiFi 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 modem router.

► To specify basic WiFi settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Wireless**.
The Wireless Setup page displays.
5. In the **Region** menu, 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 modem router broadcasts its network name (SSID) so that it displays when you scan for local WiFi networks on your computer or mobile 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 modem router 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 WiFi channel, select a number in the **Channel** menu.
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.

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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** menu.

10. Click the **Apply** button.

Your settings are saved.

If you used WiFi to connect to the network and you changed the SSID, you are disconnected from the network.

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

If you cannot connect with WiFi, check the following:

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

Change the WiFi Security Option

Your modem router comes with preset WPA2 or WPA security. The password that you enter to connect to your network is unique to your modem router and is on the modem router label. We recommend that you do not disable security.

► To change the WPA settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.

2. Enter **http://routerlogin.net** or **http://192.168.0.1**.

A login window opens.

3. Enter the modem router admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **Wireless**.

The Wireless page displays.

5. Under Security Options, select a WPA option.

The WPA2 options use the newest standard for the strongest security, but some older computers and mobile devices cannot use WPA2. This setting protects your WiFi network and lets computers and mobile devices 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.

Specify Network Settings

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 settings are saved.

Set Up a Guest Network

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

► To set up a guest network:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Guest Network**.
The Guest Network Settings page displays.
5. Select any of the following 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 WiFi access point broadcasts its name (SSID) to all WiFi 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 computers and mobile 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 mobile devices cannot use it. We recommend that you select the WPA-PSK [TKIP] + WPA2-PSK [AES] radio button. This setting protects your WiFi network and lets computers and mobile devices can connect to the WiFi network by using either WPA2 or WPA security.
8. Click the **Apply** button.

Your settings are saved.

Control the WiFi Radios

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

You can turn the WiFi radios on and off with the WiFi On/Off button on the modem router, or you can log in to the modem router and enable or disable the WiFi radios. If you are close to the modem router, it might be easier to press its WiFi On/Off button. If you are away from the modem 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 WiFi Schedule](#) on page 62).

Use the WiFi On/Off Button

► To turn the WiFi radios off and on with the WiFi On/Off button:

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

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

Enable or Disable the WiFi Radios

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

► To enable or disable the WiFi radios:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Wireless Settings**.
The Wireless Settings page displays.
5. Select or clear the **Enable Wireless Gateway Radio** check boxes in the 2.4 GHz and 5 GHz sections of the page.
Clearing this check box turns off the WiFi feature of the modem router.
6. Click the **Apply** button.

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

Set Up a WiFi Schedule

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

► To set up the WiFi schedule:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Wireless Settings**.
The Advanced Wireless Settings page displays.
5. Click the **Add a new period** button.
The Turn off wireless signal by schedule page displays.
6. Use the menus, radio buttons, and check boxes to set up a period during which you want to turn off the WiFi signal.
7. Click the **Apply** button.
The Advanced Wireless Settings page 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.

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The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

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

The Advanced Wireless Settings page displays.

The Gateway'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 modem router's WiFi settings through WPS.

5. (Optional) Select or clear the **Disable Router's PIN check box.**

The PIN function might temporarily be disabled when the modem router detects suspicious attempts to break into the modem router's WiFi settings by using the modem router's PIN through WPS. You can manually enable the PIN function by selecting the Disable 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. We recommend that you leave this check box selected.

If you clear this check box, the next time a new WiFi client uses WPS to connect to the modem router, the modem router WiFi settings change to an automatically generated random SSID and security key.

7. Click the **Apply button.**

Your settings are saved.

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

The chapter includes the following sections:

- *Change the admin Password*
- *Set Up Password Recovery*
- *Recover the admin Password*
- *View Modem Router Status*
- *View Logs of Modem Router Activity*
- *View Event Logs*
- *Run the Ping Utility*
- *Run the Traceroute Utility*
- *Monitor Internet Traffic*
- *View Devices Currently on the Network*
- *Manage the Modem Router Configuration File*
- *View or Change the Modem Router WiFi Channel*
- *Dynamic DNS*
- *Remote Management*

Change the admin Password

You can change the default password that is used to log in to the modem router with the user name admin. This password is not the one that you use for WiFi access. The modem router label shows your unique WiFi network name (SSID) and password 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Set Password**.
The Set Password page display.
5. Type the old password, and type the new password twice.
We recommend that you enable password recovery. See [Set Up Password Recovery](#) on page 65.
6. Click the **Apply** button.
Your settings are saved.

Set Up Password Recovery

We recommend 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.

4. Select **ADVANCED > Administration > Set Password**.
The Set Password page 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 settings are saved.

Recover the admin Password

► To recover your password:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Click the **Cancel** button.
If password recovery is enabled, you are prompted to enter the serial number of the modem router.
4. Enter the serial number of the router.
The serial number is on the modem router label.
5. Click the **Continue** button.
A window opens requesting the answers to your security questions.
6. Enter the answers to the security questions.
7. Click the **Continue** button.
A window opens and displays your recovered password.
8. Click the **Login again** button.
A login window opens.
9. With your recovered password, log in to the router.

View Modem Router Status

► To view modem router status and usage information:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.

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The BASIC Home page displays.

4. Click the **ADVANCED** tab.

The ADVANCED Home page displays information about your modem router.

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

Display Internet Port Statistics

► To display Internet port statistics:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Click the **ADVANCED** tab.
The Advanced page displays.
5. In the Internet Port pane, click the **Show Statistics** button.
The Show Statistics window displays the following information:
 - **System Up Time**. The time elapsed since the modem router was last restarted.
 - **Port**. The statistics for the WAN (Internet) and LAN (Ethernet) ports. For each port, the page displays the following:
 - **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 page.
6. To change the polling frequency, enter a time in seconds in the **Poll Interval** field and click the **Set Interval** button.
7. To stop the polling entirely, click the **Stop** button.

Check the Internet Connection Status

► To check the Internet connection status:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.

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3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Click the **ADVANCED** tab.
The Advanced page displays.
5. In the Internet Port pane, click the **Connection Status** button.
The Connection Status window displays the following information:
 - **IP Address.** The IP address that is assigned to the modem router.
 - **Subnet Mask.** The subnet mask that is assigned to the modem router.
 - **Default Gateway.** The IP address for the default gateway that the modem 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 modem 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 window, click the **Renew** button.
8. To exit, click the **Close Window** button.

View Logs of Modem Router Activity

The log is a detailed record of the websites you accessed or attempted to access and other modem 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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Logs**.
The Logs page displays the following information:

- **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.
 - **Action.** The action that occurred, such as whether Internet access was blocked or allowed.
5. To customize the log, scroll down to view the bottom of the page and clear or select the check boxes.
 6. To refresh the log page, click the **Refresh** button.
 7. To clear the log entries, click the **Clear Log** button.
 8. To email the log immediately, click the **Send Log** button.

View Event Logs

Event logs capture important modem router events.

► To view the event logs:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Event Log**.
The Event Log page displays the following information:
 - **Time.** The time the event was recorded.
 - **Priority.** The severity for this event.
 - **Description.** A description of this event.
5. To refresh the page, click the **Refresh** button.
6. To clear the log entries, click the **Clear Log** button.

Run the Ping Utility

Ping is an administration utility that tests whether a computer on the network is reachable and measures the time it takes messages sent from the originating device to reach a destination computer and return.

► To run a ping test:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Diagnostics**.
The Diagnostics page displays.
In the **Utility** menu, **Ping** is selected by default.
5. Select the Ping Test Parameters **IPv4** or **IPv6** radio button.
6. Specify the following parameters for the ping utility:
 - **Target**. The IP address of the ping target computer.
 - **Ping Size**. The size (in bytes) of the ping packet.
 - **No. of Pings**. The number of times to ping the target computer. The maximum number of pings is 128.
 - **Ping Interval**. The time between pings.
7. Click the **Start Test** button.
The ping results display.
8. To stop a ping test, click the **Abort Test** button.
9. To clear the results from the display, click the **Clear Results** button.

Run the Traceroute Utility

To display the route and measure transit delays of packets across an IP, run the traceroute utility.

► To run a traceroute test:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.

4. Select **ADVANCED > Administration > Diagnostics**.
The Diagnostics page displays.
5. In the **Utility** menu, select **Traceroute**.
6. Specify the following parameters for the traceroute utility:
 - **Target**. The IP address or host name of the computer you are tracing.
 - **Max Hops**. The maximum number of hops to allow when tracing the route.
 - **Data Size**. The input the size (in bytes) of the packet.
 - **Base Port**. The port number to send the packet to.
 - **Resolve Host**. Select On to resolve the host name to the IP address.
7. Click the **Start Test** button.
The traceroute results display.
8. To clear the results from the display, click the **Clear Results** button.

Monitor Internet Traffic

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

► To monitor Internet traffic:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Traffic Meter**.
The Traffic Meter page displays.
5. Select the **Enable Traffic Meter** check box.
6. To control the volume of Internet traffic, 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:

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- **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. 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. To start the traffic counter immediately, click the **Restart Counter Now** button.
 9. In the Traffic Control section, enter a value in minutes to specify when the modem router issues 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. 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 modem router and to change the poll interval, click the **Traffic Status** button.

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 a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**. A login window opens.
3. Enter the modem router admin user name and password. The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive. The BASIC Home page displays.
4. Select **Attached Devices**. The Attached Devices page displays.

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

- **Status.** The status of the device, Allowed or Blocked.
- **Device Name.** If the device name is known, it is shown here.
- **IP Address.** The IP address that the modem 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.

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

Manage the Modem Router Configuration File

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

Back Up Settings

► To back up the modem router's configuration settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Backup Settings**.
The Backup Settings page displays.
5. Click the **Back Up** button.
6. Specify a location on your network.
A confirmation message displays.
7. Click the **OK** button.
A copy of the current settings is saved in the location you specified.

Restore Configuration Settings

► To restore configuration settings that you backed up:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Backup Settings**.
The Backup Settings page displays.
5. Click the **Browse** button to find and select the **.cfg** file.
6. Click the **Restore** button.
The file is uploaded to the modem router and the modem router reboots.



WARNING:

Do not interrupt the 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 modem router to a different network.

► To erase the configuration settings

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Backup Settings**.
The Backup Settings page 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 **192.168.0.1**. DHCP is enabled.

View or Change the Modem Router WiFi Channel

Laws or guidelines in many countries and geographic locations specify which channels can be used. Depending on your location, some channels might not be available. If many WiFi networks at your location use the same channel as your WiFi network, you might experience interference. You can change the channel to avoid the interference.

► To view or change your WiFi channel:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Administration > Wireless Channel**.
The Wireless Channel page displays WiFi channels in use in the 2.4 GHz WiFi band. Your network is shown in blue. Yellow shows other networks in your area.
5. To view WiFi channels in use in the 5 GHz WiFi band, select the **5 GHz a/n** radio button.
6. To change the WiFi channel, click the **Change Channel** button.
The Wireless Setup page displays.
7. In the **Channel** menu, select a different channel setting.
8. Click the **Apply** button.
Your settings are saved.

Dynamic DNS

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

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

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

Specify a DNS Account

► To set up Dynamic DNS in the modem router:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Settings > Dynamic DNS**.
The Dynamic DNS page displays.
5. Select the **Use a Dynamic DNS Service** check box.
6. In the **Service Provider** menu, select your service provider.
7. In the **Host Name** field, type the host name (sometimes called the domain name) for your account.
8. In the **User Name** field, enter the user name for your account.
9. In the **Password** (6-32 characters) field, type the password for your DDNS account.
10. Click the **Apply** button.
Your settings are saved.
11. To verify that your Dynamic DNS service is enabled in the modem router, click the **Show Status** button.
A message displays the Dynamic DNS status.

Change the Dynamic DNS Settings

► To change your settings:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Settings > Dynamic DNS**.
The Dynamic DNS page displays.
5. Change your DDNS account settings as necessary.
6. Click the **Apply** button.

Your settings are saved.

Remote Management

You can access your modem router over the Internet to view or change its settings. You must know the modem router's WAN IP address to use this feature.

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 65.

Setting Up Remote Management

► To set up remote management:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Remote Management**.
The Remote Management page displays.
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 modem router's remote management.
For enhanced security, restrict access to as few external IP addresses as practical.
Select one of the following:
 - To allow access from a single IP address on the Internet, select the **Only This Computer** radio button. Enter the IP address to be allowed access.
 - To allow access from a range of IP addresses on the Internet, select the **IP Address Range** radio button. Enter a beginning and ending IP address to define the allowed range.
 - To allow access from any IP address on the Internet, select the **Everyone** radio button.
7. Specify the port number for accessing the modem router's web pages.
Normal web browser access uses the standard HTTP service port 80. For greater security, enter a custom port number for remote access to the modem router web pages. 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 settings are saved.

Using Remote Access

▶ **To use remote access:**

1. Launch an Internet browser on a computer that is not on your home network.
2. Type your modem 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.

Specify Internet Port Settings

9

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 modem 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 modem 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.
The server computer must always use the same IP address. To specify this setting, use the reserved IP address feature. See [Manage LAN IP Addresses](#) on page 54.
3. Launch a web browser from a computer or mobile device that is connected to the modem router network.
4. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
5. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
6. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
The Port Forwarding/Port Triggering page displays.
7. Leave the **Port Forwarding** radio button selected as the service type.
8. In the **Service Name** menu, select the service name.
If the service that you want to add is not in the menu, create a custom service. See [Add a Custom Port Forwarding Service](#) on page 82.
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 menu.

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 a web browser from a computer or mobile device that is connected to the modem router network.
3. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
4. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
5. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
The Port Forwarding/Port Triggering page displays.
6. Leave the **Port Forwarding** radio button selected as the service type.
7. Click the **Add Custom Service** button.
The Ports-Custom Services page displays.
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.
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.
11. 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.
12. Type the IP address in the **Internal IP address** field or select the radio button for an attached device listed in the table.
13. Enter the external IP address.
14. Click the **Apply** button.
The service is now in the menu on the Port Forwarding/Port Triggering page.

Edit a Port Forwarding Service

► To edit a port forwarding entry:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
The Port Forwarding/Port Triggering page 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 page displays.
8. Specify changes to any of the settings.
For more information about the settings see the previous section, see [Add a Custom Port Forwarding Service](#) on page 82.
9. Click the **Apply** button.
Your settings are saved.

Delete a Port Forwarding Entry

► To delete a port forwarding entry:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in.
The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
The Port Forwarding/Port Triggering page 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.

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 modem router always gives your web server an IP address of 192.168.0.33.
2. On the Port Forwarding/Port Triggering page, configure the modem router to forward the HTTP service to the local address of your web server at **192.168.0.33**.
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 on the Dynamic DNS page of the modem 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 Modem 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 modem router.
 - **Destination port number.** 80, which is the standard port number for a web server process.
2. Your modem router receives the message and finds your port forwarding rule for incoming port 80 traffic.
3. The modem router changes the destination in the message to IP address 192.168.0.123 and sends the message to that computer.
4. Your web server at IP address 192.168.0.123 receives the request and sends a reply message to your modem router.
5. Your modem router performs Network Address Translation (NAT) on the source IP address, and sends the reply through the Internet to the computer or mobile 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 modem router monitors traffic to the Internet from an outbound “trigger” port that you specify. For outbound traffic from that port, the modem router saves the IP address of the computer that sent the traffic. The modem 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).

Add a Port Triggering Service

► To add a port triggering service:

1. Launch a web browser from a computer or mobile device that is connected to the modem router network.
2. Enter **http://routerlogin.net** or **http://192.168.0.1**.
A login window opens.
3. Enter the modem router admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
The Port Forwarding/Port Triggering page displays.
5. Select the **Port Triggering** radio button.
The page adjusts.
6. Click the **Add Service** button.
The Port Triggering-Services page displays.
7. In the **Service Name** field, type a descriptive service name.
8. In the **Service User** menu, select **Any**, or select **Single address** and enter the IP address of one computer:
 - **Any** (the default) allows any computer on the Internet to use this service.
 - **Single address** restricts the service to a particular computer.
9. Select the service type, either **TCP** or **UDP** or **TCP/UDP** (both).
If you are not sure, select **TCP/UDP**.

10. In the **Triggering Starting Port** field, enter the beginning port number.
11. In the **Triggering Ending Port** field, enter the ending port number.
12. Enter the inbound connection port information in the **Connection Type**, **Starting Port**, and **Ending Port** fields.
13. Click the **Apply** button.

The service is now in the Portmap table. You must enable port triggering before the modem router used port triggering for the service that you added. See the following section.

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 modem 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 modem 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 modem router.
3. Your modem router creates an entry in its internal session table describing this communication session between your computer and the IRC server. Your modem 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 modem 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 modem router using the NAT-assigned source port (for example, port 33333) as the destination port. The IRC server also sends an “identify” message to your modem router with destination port 113.
6. When your modem 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 modem router restores the original address information replaced by NAT and sends this reply message to your computer.
7. When your modem 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 modem 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 modem router eventually senses a period of inactivity in the communications. The modem router then removes the session information from its session table, and incoming traffic is no longer accepted on port numbers 33333 or 113.

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

This chapter contains the following sections:

- *Troubleshoot With the LEDs*
- *Troubleshoot the Cable Internet Connection*
- *Cannot Log In to the Modem Router*
- *Changes Not Saved*
- *WiFi Connectivity*
- *Troubleshoot Your Network Using the Ping Utility*

Troubleshoot With the LEDs

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

Power LED Is Off

- Make sure that the power adapter is securely connected to your modem 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 problem persists, contact technical support for help at [http://www.netgear.com/support](#).

LEDs Never Turn Off

When the modem 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 modem router.

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

- Cycle the power to see if the modem router recovers.
- Press and hold the Reset button to return the modem router to its factory settings. For more information, see [http://www.netgear.com/support](#).

If the error persists, a hardware problem might be the cause. Contact technical support at [http://www.netgear.com/support](#).

Internet LED Is Off

If the Internet LED is off and the modem router is connected to the cable television cable, try the following:

- Make sure that the coaxial cable connections are secure at the modem router and at the wall jack.
- Make sure that your cable Internet provider provisioned your cable Internet service. Your provider can verify that the signal quality is good enough for modem router service.
- Remove any excessive splitters that are on your cable line.

Troubleshoot the Cable Internet Connection

When your modem router cannot access the Internet and your Internet LED is on, register the cable MAC address or device MAC address of your modem router with your cable Internet provider.

Additionally, make sure that the modem router is specified as the TCP/IP gateway for your computer. If your computer obtains its information from the modem router by DHCP, reboot the computer and verify the gateway address.

Cannot Log In to the Modem Router

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

1. Make sure that you are connected to the modem router's wired or WiFi network.
 - For a wired Ethernet connection, make sure that the Ethernet connection is secure and the modem router is powered on (its Power LED is lit).
 - For a WiFi connection, make sure that you selected the correct network. If you cannot find the WiFi network, make sure that the modem router is powered on (its Power LED is lit). If the modem router is powered on, it is possible that someone turned off the SSID broadcast or turned off the WiFi radios. See [WiFi Connectivity](#) on page 90.
2. If you are connected to the modem router network, but the web browser does not display the login window, check the following:
 - 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.
3. If the browser displays the login window, but you cannot access the modem router, make sure that you are using the correct login information.

The user name is **admin**. The password is the one that you specified the first time that you logged in. Both are case-sensitive. Make sure that Caps Lock is off when you enter this information.
4. If you customized advanced home network settings such as the IP address scheme, check the following:
 - Make sure that the IP address of your computer is on the same subnet as the modem router. If you are using the recommended addressing scheme, your computer's address is in the range of 192.168.0.2 to 192.168.0.254.
 - 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 modem router, and reboot your computer.
 - If your modem router's IP address was changed and you do not know the current IP address, clear the modem router's configuration to factory defaults. This sets the modem router's IP address to 192.168.0.1. For more information, see [Factory Settings](#) on page 94.

Changes Not Saved

If the modem router does not save the changes you that make in the modem router interface, check the following:

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- When entering configuration settings, always click the **>Apply** button before moving to another page or tab, or your settings are lost.
- Click the **Refresh** or **Reload** button in the web browser. The changes might be saved, but the old settings might be in the web browser's cache.

WiFi Connectivity

If you are having trouble connecting to the modem router with WiFi, try to isolate the problem:

- The computer or WiFi device that you are using does not find the WiFi network. This can happen for the following reasons:
 - Someone pressed the WiFi On/Off button on the modem router, which turned off the Wradios. Check the 2.4 GHz and 5 GHz LEDs on the front of the modem router. If they are off, press the WiFi On/Off button to turn the WiFi radios back on.
 - Someone logged in to the modem router and disabled its WiFi radios or set up a WiFi schedule. In this case, pressing the WiFi button does not turn the WiFi radios back on. You must log in to enable the WiFi radios. Use an Ethernet cable for a wired connection to the modem router. Then log in and change the settings. For more information, see [Control the WiFi Radios](#) on page 61.
 - Someone logged in to the modem router and disabled its SSID broadcast. Your WiFi network is hidden and does not display in your WiFi client's scanning list. (By default, SSID broadcast is enabled.)
To connect with WiFi, you must type the network SSID and password. For information about how to enable the SSID broadcast, see [Specify Basic WiFi Settings](#) on page 58.
- You can find the WiFi network, but you can't connect. Check the following:
 - Make sure that your computer or device supports the security that you are using for your WiFi network (WPA or WPA2).
 - You are not sure what the WiFi password is.
The preset WiFi password is on the modem router label. If you changed it and do not remember the new password, you can use a wired Ethernet connection to log in to the modem router and view or change the WiFi password. For more information, see [Change the WiFi Security Option](#) on page 59.
 - The WiFi signal strength is weak in your location.
Is your modem router too far from your computer, or too close? Place your computer near the modem router, but at least 6 feet (1.8 meters) away, and see if the signal strength improves.
Check for sources of WiFi interference that might block the signal. See [Position Your Modem Router](#) on page 13.

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 Modem Router

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

► To ping the modem router from a Windows-based 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 modem 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 on for your network devices. If your modem 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 modem 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 modem 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 Windows Run window, 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 like those shown in *Test the LAN Path to Your Modem Router* on page 91 display.

If you do not receive replies, check the following:

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- Check to see that the IP address of your modem router is listed as the default gateway on your computer. 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 modem 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 to see 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 on the Internet Setup page.
- 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. If your ISP additionally restricts access to the MAC address of a single computer connected to that modem, configure your modem router to “clone” or “spoof” the MAC address from the authorized computer.

This appendix covers the following topics:

- *Factory Settings* on page 94
- *Technical Specifications* on page 95

Factory Settings

You can return the cable modem 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 cable modem for at least seven seconds. The cable modem resets, and returns to the factory configuration settings shown in the following table.

Table 4. Factory default settings

Feature		Default behavior
Modem router login	User login URL	www.routerlogin.com, www.routerlogin.net, or 192.168.0.1
	User name (case-sensitive)	admin
	Login password (case-sensitive)	The first time that you log in to the modem router, you are prompted to set the admin password
Local network (LAN)	LAN IP	192.168.0.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.0.2 to 192.168.0.254
	DMZ	Disabled
	Time zone	ISP/MSO ToD (time of day) configuration
	SNMP	Enabled
Cable modem firewall	Inbound (communications coming in from the Internet)	Disabled
	Outbound (communications going out to the Internet)	Enabled (all)
WiFi	WiFi communication	Enabled
	SSID name	See the cable modem label
	Security	WPA2-PSK (AES)
	Broadcast SSID	Enabled
WiFi (continued)	Country/region	United States
	RF channel (2.4 GHz)	Auto ¹
	RF channel (5 GHz)	CH 153 (or manually select Band I and 4 Channels)
	Operating mode	Up to 1000 Mbps at 2.4 GHz, 2167 Mbps at 5 GHz

¹Maximum WiFi 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 5. Modem router specifications

Feature	Description
Data and routing protocols	TCP/IP, DHCP, Dynamic DNS, UPnP, and SMB
Power adapter (North America)	120V, 60 Hz, input 19V/3.16 A DC output
Dimensions	316 x 264 x 193mm (12.4 x 10.4 x 7.5 in.)
Weight	1545 g (3.4 lb)
Operating temperature	0° to 40° C (32° to 104° F)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15 Class B
LAN	10BASE-T or 100BASE-TX or 1000BASE-T, RJ-45
WAN	24 x 8 DOCSIS 3.0 WAN Interface
WiFi	Maximum WiFi signal rate complies with the IEEE 802.11 standard. See the footnote in <i>Factory Settings</i> on page 94.
Radio data rates	Auto Rate Sensing
Data encoding standards	IEEE 802.11ac 2.0 IEEE 802.11n version 2.0 IEEE 802.11n 256 QAM IEEE 802.11g, IEEE 802.11b 2.4 GHz IEEE 802.11n, IEEE 802.11a 5.0 GHz
Maximum computers per WiFi network	Limited by the amount of WiFi network traffic generated by each node (typically 50–70 nodes)
Operating frequency range	2.4 GHz: 2.412–2.462 GHz 5 GHz: 5.18–5.24 + 5.745–5.825 GHz
802.11 security	WPA-PSK, WPA2-PSK, and WPA/WPA2