

# RangeMax Wireless-N 150 Router Setup Manual



## **NETGEAR®**

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November 2009

208-10541-01

v1.0

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# Getting to Know Your Wireless Router

Congratulations on your purchase of a NETGEAR® high-speed wireless router, the RangeMax Wireless-N 150 Router Model WPN824N.

Before you begin installing your router, check the package contents (see [Unpacking Your New Router](#)). Become familiar with the front and back panels of your router—especially the status lights—and the important information on the router label (see “[Bottom Label](#)” on page 5).

## Unpacking Your New Router

The product package should contain the following items:

- The wireless router
- A snap-on stand for your wireless router
- An AC power adapter (varies by region)
- A yellow Ethernet cable
- *NETGEAR Installation Guide*
- The *Resource CD*, which includes:
  - The Smart Wizard Installation Assistant (Autorun.exe)
  - A PDF version of this manual
  - A link to the online *User Manual*
- Warranty and Support Information cards

If any of the parts are incorrect, missing, or damaged, contact your NETGEAR dealer. Keep the carton, including the original packing materials, in case you need to return the product for repair.

### **To prepare your router for installation:**

1. Carefully peel off the protective film covering the sides of your router.

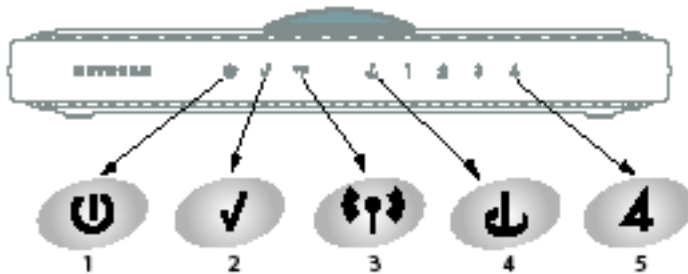
2. Set up your wireless router by inserting the router into the stand supplied with your router.



**Figure 1**

3. Place your router in an area suitable for installation (near an AC power outlet and accessible to the Ethernet cables for your wired computers).

## Router Front Panel



**Figure 2**

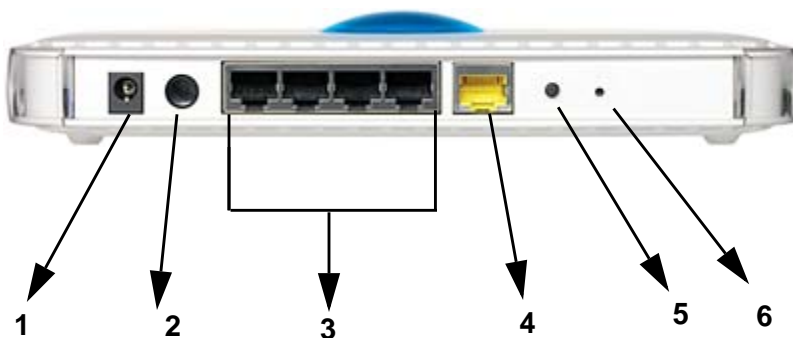
You can use the status lights on the front of the wireless router to verify various conditions.

**Table 1-1. Status Light Descriptions**

Item	Function	Activity	Description
1	Power	On green solid Off	Power is supplied to the router. Power is not supplied to the router.
2	Test	On Off Slow blinking	The unit is performing the power-on self-test diagnostic. The unit successfully completed the power-on self-test diagnostic. The reset button is being pushed, restoring the factory default settings.
3	Wireless	On Off Blinking	The wireless interface is enabled. The wireless interface is turned off. Data is being communicated over the wireless network.
4	Internet	Amber off Amber on Amber blinking  Green off On Blinking	No Ethernet cable is connected to the modem. The Ethernet cable connection to the modem is good. Packets are being transmitted and received from a modem or other network device, but no IP address has been received. No IP address has been received. IP address has been received. IP address received and data is being transmitted and received.
5	LAN	Green Amber	The LAN port has detected a 100 Mbps link with an attached device. The LAN port has detected a 10 Mbps link with an attached device.

## Router Back Panel

The rear panel of the WPN824N router contains the items in the list that follows the figure.



**Figure 3**

The back of the wireless router includes:

1. AC power adapter outlet
2. Power On/Off switch
3. Four local (LAN) 10/100 Mbps Ethernet ports for connecting the router to the local computers
4. Internet (WAN) Ethernet port for connecting the router to a cable or DSL modem
5. Wireless On/Off button
6. Factory default reset button

## Top Panel



Figure 4

The top of the wireless router includes a dome with status lights that identify the status of the selected option you chose for either *Wireless data status (default)*, *Guest Network status*, *Live Parental Controls status*, or *Broadband Usage Meter status*. These status lights are on by default, but can be turned off by clicking the Dome, or by going to the Network Monitor Display Settings page and clicking the **Turn off LED** button. (see “Router Back Panel” on page 4).

## Bottom Label

View the label on the bottom of the wireless router to identify the serial number, port connectors, status lights, and default login information.

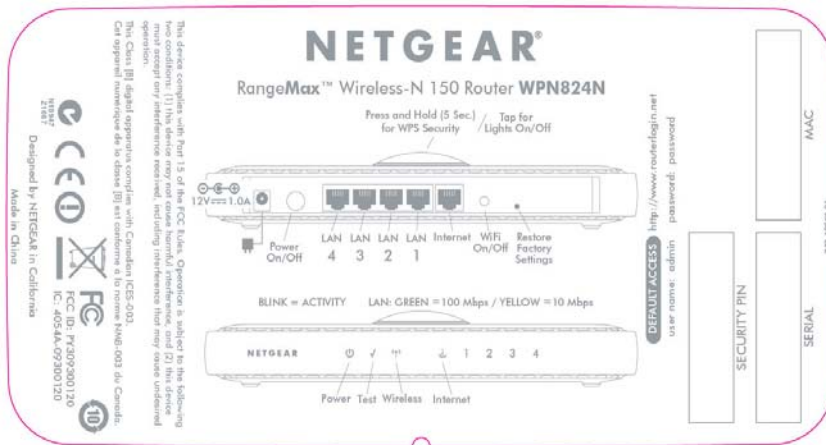


Figure 5



## What You Need Before You Begin

Prepare the following before you set up your Product Family:

- Internet service.
- The configuration information your Internet Service Provider (ISP) gave you. Depending on how your Internet account was set up, you might need one or more of these settings for the wireless router to access the Internet:
  - Host and domain names
  - Internet login name and password (frequently an e-mail address and password)
  - Domain Name Server (DNS) addresses
  - Fixed or static IP address

Your ISP should have provided you with all the information needed to connect to the Internet. If you cannot locate this information, you can ask your ISP to provide it.

- For cable modem service, use the computer you first used to set up your Internet service.

## Updating Your Router Firmware

NETGEAR is always improving the operability and features included with your router. To make it easy for you to receive the best, most up-to-date features of your router, NETGEAR provides a variety of methods for updating your product.

- The Smart Wizard installation assistant lets you check for and install updates as part of the setup activity.
- The router includes an update feature that lets you check for and install updates. You must be logged in to the router to use this feature.

These options are discussed in [“Accessing the Wireless Router after Installation and Checking for New Firmware”](#) on page 13.

## Two Setup Methods: Smart Wizard Setup or Manual Setup

You have two methods available for setting up your wireless router:

- **Smart Wizard Setup.** This option is the easiest. The wizard guides you through the setup process, automates many of the steps, and verifies that necessary conditions exist and that steps you perform have been successfully completed. This option requires a PC running Microsoft Windows.
- **Manual Setup.** This option is best if you cannot use the wizard on the CD, are replacing an existing wireless router, or are technically knowledgeable. Follow the instructions in this manual to set up your wireless router.

Use the setup option that best suites you.

### Smart Wizard Setup

The wizard setup process takes about 20 minutes to complete.

1. Insert the NETGEAR CD into a Windows PC. The CD automatically starts and detects the language you are using on your PC. Accept the language option, or change to a different language.



If the CD does not automatically start, browse the CD and double-click Autorun. Be sure to double-click the Autorun file that begins with an upper-case A.

2. When the Welcome screen displays, click **Setup** to start the Smart Wizard. Follow the wizard instructions.

## Manual Setup

There are two steps to setting up your wireless router:

1. Connect the Product Family to the ADSL or cable modem, and connect a computer to the Product Family.



Your computer has to be set to automatically get its TCP/IP network settings from the Product Family through DHCP. This is usually the case. If you are unsure about this, use the wizard on the CD, which automatically takes care of this for you, or refer to the documentation for your computer.

2. Configure the Product Family to use your Internet service.

## Connecting Your Wireless Router

To connect your wireless router:

1. Connect the wireless router, the computer, and the modem.
  - a. Turn off your computer.
  - b. Turn off and unplug the cable or ADSL broadband modem.
  - c. Locate the Ethernet cable (1) that connects your computer to the modem.

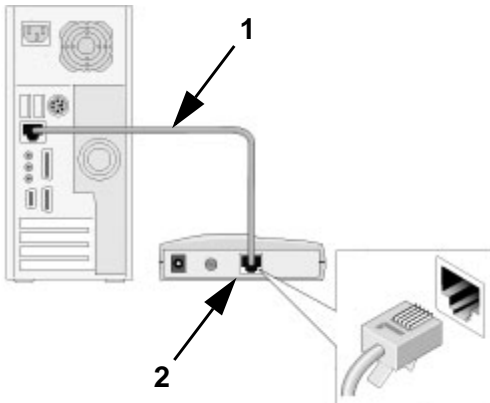


Figure 6

- d. Disconnect the cable at the modem (2). You will connect it to the router later.

- e. Use the label on the bottom of the wireless router to locate the Internet port, which is to the left of the Wireless On/Off button on your router.
- f. Locate the Ethernet cable that came with the NETGEAR product. Securely insert that Ethernet cable into your modem and into the Internet port of the wireless router (3).

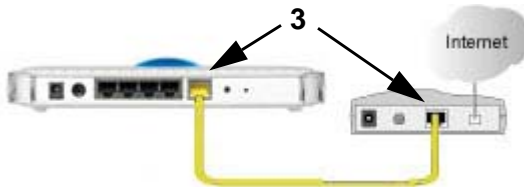


Figure 7

- g. Locate the cable you removed from the modem in Step c. Securely insert that cable (4) into a LAN port on the router such as LAN port 1.

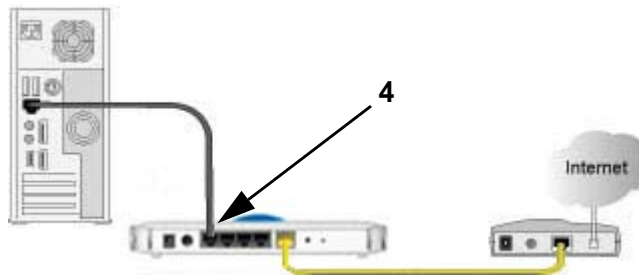


Figure 8

Your network cables are connected, and you are ready to start your network.


2. Start your network in the correct sequence.



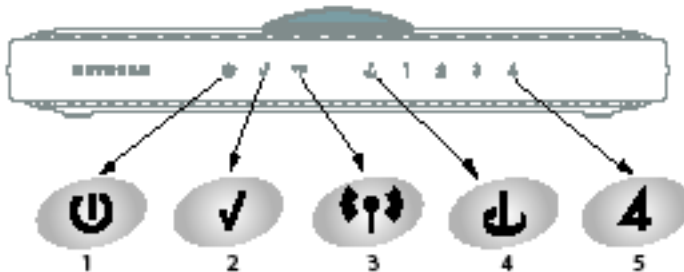
Failure to start or restart your network in the correct sequence could prevent you from accessing the Internet.

- a. First, plug in and turn on the cable or DSL modem. Wait 2 minutes.
- b. Now, plug the power cord into your wireless router and into a power outlet. Wait 1 minute.

- c. Last, turn on your computer.

	<p>For DSL customers, if software logs you in to the Internet, <i>do not</i> run that software. You might need to go to the Internet Explorer Tools menu, Internet Options, then click the Connections tab where you can select <b>Never dial a connection</b>.</p>
---	---

- d.




**Figure 9**

- e. Check the wireless router status lights to verify the following:
- **Power.** The power light (1) should turn solid green. If it does not, see [“Verify whether the Test light never turns on or stays on:”](#) on page 20.
  - **Test:** The test light (2) blinks when the router is first turned on, then goes off. If after 2 minutes it is still on, see [“Verify whether the Test light never turns on or stays on:”](#) on page 20.
  - **Wireless.** The wireless light (3) should be on.
  - **Internet:** The Internet port light (4) should be lit. If it is not, make sure that the Ethernet cable is securely attached to the wireless router Internet port and that the modem, and the modem is powered on.
  - **LAN.** A LAN light (5) should be lit. Green indicates that your computer is communicating at 100 Mbps; amber indicates 10 Mbps. If a LAN light is not lit, check that the Ethernet cable from the computer to the router is securely attached at both ends, and that the computer is turned on.

3. Connect to the wireless router by typing **http://www.routerlogin.net** in the address field of your browser, and then click **Enter**.



**Figure 10**


	<p>Connect to the wireless router by typing any one of these three URLs in the address field of your browser, then clicking Enter:</p> <ul style="list-style-type: none"> <li>• <a href="http://www.routerlogin.net">http://www.routerlogin.net</a></li> <li>• <a href="http://www.routerlogin.com">http://www.routerlogin.com</a></li> <li>• <a href="http://192.168.1.1">http://192.168.1.1</a></li> </ul>
---	--

A login window like the one in the following figure opens:



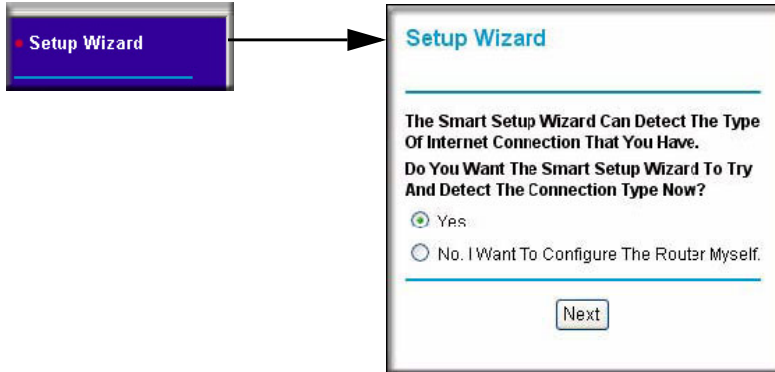
**Figure 11**

4. For security reasons, the router has its own user name and password. When prompted, enter **admin** for the router user name and **password** for the router password, both in lower case letters.

	<p>The router user name and password should not be confused with any user name or password you may use to log in to your Internet connection.</p>
---	---

After logging in, if you see a window with a message about firmware upgrades, click **Close Window**.

On the left, click **Setup Wizard** to view the following screen.



**Figure 12**

If you cannot connect to the wireless router, verify your computer networking setup. It should be set to obtain *both* IP and DNS server addresses automatically, which is usually the case. For help with this, consult the documentation that came with your computer, or see the links in "[Related Documents](#)".

5. Click **Next**. The wizard assists you with configuring your wireless router to access the Internet.

Advanced users who want to manually configure the router can select the **No** radio button, enter **admin** and **password** as the user name and password when prompted, and fill in the required information on the Basic Settings page (for more information about basic settings, refer to "[Product Registration, Support, and Documentation](#)" on page 13).

6. Click **Done** to finish.

You are now connected to the Internet! The wireless router displays its home page.

If you do not click Logout, the wireless router waits 5 minutes after there is no activity before it automatically logs you out.

## Product Registration, Support, and Documentation

Register your product at <http://www.NETGEAR.com/register>. Registration is required before you can use NETGEAR's telephone support service. Product updates and Web support are always available by going to: <http://www.NETGEAR.com/support>.

Documentation is available on the CD, on the support website, and on the documentation website. When the wireless router is connected to the Internet, click the **Knowledge Base** or the **Documentation** link under Web Support to view support information or the documentation for the wireless router.

## Accessing the Wireless Router after Installation and Checking for New Firmware

The Smart Wizard appears only when you first install the router or when the router is in its factory default state (for example, if you have reset the router to its factory default settings). If you want to change the settings after installing and configuring your router using the Smart Wizard, you must open a browser window and log in to the router.



The factory default state is restored when you use the factory reset button. See “[How Do I Restore the Default Password and Configuration Settings?](#)” on page 24 for more information about this feature.

**To access the router using its login name and password:**

1. Connect to the wireless router by typing **<http://www.routerlogin.net>** in the address field of your browser, and then click **Enter**.



**Figure 13**




You can connect to the wireless router by typing any one of these three URLs in the address field of your browser, then clicking **Enter**:

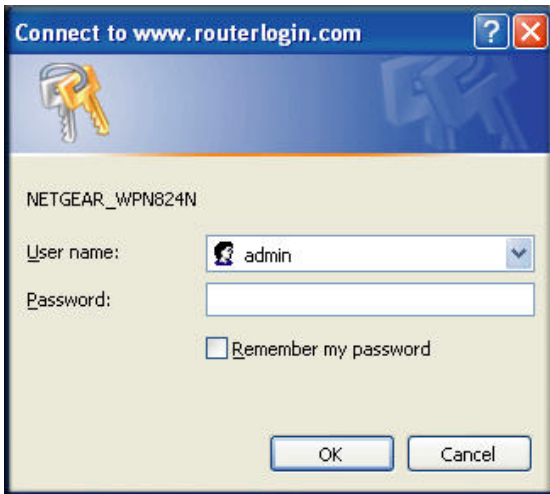
- <http://www.routerlogin.net>
- <http://www.routerlogin.com>
- <http://192.168.1.1>



- For security reasons, the router has its own user name and password. When prompted, enter **admin** for the router user name and **password** for the router password, both in lower case letters.

	The router user name and password should not be confused with any user name or password you may use to log in to your Internet connection.
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A login window like the one in the following figure opens:



**Figure 14**

Enter the user name and password.

**To update your router firmware:**

- If the Router Upgrade screen does not display automatically, select **Router Upgrade** under Maintenance on the main menu. The Router Upgrade screen displays.
- Click **Browse**, and locate the unzipped firmware image that you downloaded to your PC (the file ends in .img).

3. Once you have selected the file, click **Upload** to send the software to the router. The upload process takes several minutes. When the software upload process is complete, the router restarts.



Do not try to go online, turn off the router, shut down the computer, or do anything else to the router until the router finishes restarting! When the Test light stops blinking, wait a few seconds more before using the router.

4. After the router has restarted, select **Router Status** under the Maintenance heading. Check the firmware version to verify that your router now has the new software installed.

If you are unable to successfully upgrade using this method, refer to the online *Reference Manual* available through the **Documentation** link on the router main menu (or through a link on the *Resource CD*) for other ways to upgrade the router.

If you selected the **No** radio button during installation, and want to check for new firmware later, use the following procedure. Determine the firmware version currently running on your router before you check for updates on the NETGEAR website. Then go to the NETGEAR website and select the model number for this router. If a later version of the firmware is available, upload the firmware to your computer, and upgrade your router.

**To manually check for new router firmware:**

1. Open a browser window, and type **<http://www.routerlogin.net>** in the address field of your browser. Press **Enter**.
2. When prompted, enter the default user name and password (**admin** for the router user name and **password** for the router password), both in lowercase letters. If you changed the user name and password from the defaults, then enter your new user name and password.
3. Select **Router Status** under Maintenance on the router menu. When the Router Status screen displays, note the version number of your router firmware.
4. Go to <http://www.NETGEAR.com/support>, and select **Downloads** from the menu bar.
5. From the Product Selection drop-down list, select your router model number. The Product Support page for your router displays.
6. Under Downloads, check the most recent firmware version offered against the firmware version shown on the Router Status screen.
7. If the version on the NETGEAR website is more recent, click on its version number, then click **Right-click and Save to Download** and save the file to a location on your hard disk.

8. Follow the procedure in “To update your router firmware:” on page 14 to complete the upgrade process.

## Setting Up and Testing Basic Wireless Connectivity

Follow these instructions to set up and test basic wireless connectivity. Once you have established basic wireless connectivity, you can enable security settings appropriate to your needs.

### To set up and test basic wireless connectivity:

1. Log in to the wireless router at its default LAN address of **http://Default IP Address Variable** with the default user name of **admin** and default password of **password**, or using whatever LAN address and password you have set up.
2. Click Wireless Settings in the main menu bar of the wireless router.
3. Note that the default SSID is NETGEAR.



The SSID of any wireless adapters must match the SSID you configure in the wireless router. If they do not match, you will not get a wireless connection.

4. Set the region, selecting the region in which the wireless interface will operate.
5. To save your changes, click **Apply**.



If you are configuring the Product Family from a wireless computer and you change the Product Family’s SSID, channel, or security settings, you will lose your wireless connection when you click Apply. You must then change the wireless settings of your computer to match the Product Family’s new settings.

6. Configure and test your computers for wireless connectivity.

Program the wireless adapter of your computers to have the same wireless network name (SSID) as the wireless router. Check that they have a wireless link and are able to obtain an IP address by DHCP from the Product Family.

## Implementing Appropriate Wireless Security



Indoors, computers can connect over 802.11g or 802.11n wireless networks at a range of over 300 feet. Such distances can allow for others outside of your immediate area to access your network.

Unlike wired network data, your wireless data transmissions can extend beyond your walls and can be received by anyone with a compatible adapter. For this reason, use the security features of your wireless equipment. The wireless router provides highly effective security features, which are covered in detail in the full reference manual that is available from a link on the CD as well as a link in the main menu of your Product Family. Follow the instructions in the full manual and in the Product Family help screens to implement the security features appropriate to your needs.

# Help with Troubleshooting

This chapter gives information about troubleshooting your wireless router. You will find help with the following problems:

- Basic troubleshooting
  - “Common Things That Can Go Wrong” on page 18
  - “Basic Functions Are Not Working” on page 19
  - “I Am Unable to Log In to the Wireless Router” on page 20
  - “The Internet Service Connection Is Not Working” on page 21
  - “How Do I Restore the Default Password and Configuration Settings?” on page 24
- Advanced connectivity troubleshooting using the PING utility
  - “Testing the Path from a PC to Your Router” on page 24
  - “Testing the Path from a PC to the Internet” on page 26

## Basic Troubleshooting

Here are some tips for correcting simple problems you might have.

### Common Things That Can Go Wrong

Verify that you do not have these common problems.

**Be sure to always start your network in this sequence:**

1. Turn off and unplug the modem from its power outlet, and turn off the wireless router and computer.
2. Turn on the modem, and wait 2 minutes.
3. Turn on the wireless router, and wait 1 minute.
4. Turn on the computer.

### Make sure that the Ethernet cables are securely plugged in:

1. Verify that the Internet status light on the wireless router will be lit if the Ethernet cable to the wireless router from the modem is plugged in securely and the modem and wireless router are both turned on (see [“Router Front Panel”](#) on page 3).
2. Verify that for each powered-on computer connected to the wireless router with a securely plugged in Ethernet cable, the corresponding wireless router LAN port status light is lit (see [“Router Front Panel”](#) on page 3). The label on the bottom of the wireless router identifies the number of each LAN port (see [“Bottom Label”](#) on page 5).

### Make sure that the network settings of the computer are correct:

1. Verify that your LAN connected computers are configured to obtain an IP address automatically through DHCP. For help with this, see the documentation for your computer or [“Related Documents”](#) on page 30.
2. Verify whether the MAC address is needed. Some cable modem services require you to use the MAC address of the computer registered on the account. If so, in the Router MAC Address section of the Basic Settings menu, select **Use this Computer’s MAC Address**. To save your settings, click **Apply**. Restart the network in the correct sequence.

### Check the router status lights to verify correct router operation:

If the Power light does not turn solid green within 2 minutes after you turn the router on, reset the router according to the instructions in [“How Do I Restore the Default Password and Configuration Settings?”](#) on page 24.

## Basic Functions Are Not Working

### After you turn on power to the router, check these status lights:

1. When power is first applied, verify that the Power light is on.
  - a. Make sure that the power cord is properly connected to your router and that the power supply adapter is properly connected to a functioning power outlet.
  - b. Check that you are using the power adapter supplied by NETGEAR for this product.

If the error persists, you have a hardware problem and should contact technical support.
2. Verify that the Test light lights within a few seconds, indicating that the self-test procedure is running.

3. After approximately 20 seconds, verify that:
  - a. The Test light turned off.
  - b. The LAN port lights are lit for any local ports that are connected.
  - c. The Internet port is connected and its light is lit.

If a port's light is lit, a link has been established to the connected device. If a LAN port is connected to a 100 Mbps device, verify that the port's light is green. If the port is 10 Mbps, the light is amber.



For more information about the status lights, see [“Router Front Panel”](#) on page 3.

### Verify whether the Test light never turns on or stays on:

1. Verify that when the router is turned on, the Test light turns on for about 20 seconds and then turns off. If the Test light does not turn on or stays on, the router has a problem.
2. Turn the power off and then on to see if the router recovers. If all lights including the Test light are still on one minute after powering up:
  - a. Turn the power off and back on to see if the router recovers.
  - b. Clear the router's configuration to factory defaults. This sets the router's IP address to 192.168.1.1. This procedure is explained in [“How Do I Restore the Default Password and Configuration Settings?”](#) on page 24.

If the error persists, you might have a hardware problem and should contact technical support.

### Verify if the LAN or Internet port lights are not on when the Ethernet connection is made:

1. Make sure that the Ethernet cable connections are secure at the router and at the computer.
2. Make sure that power is turned on to the connected computer.
3. Make sure that you are using Ethernet cables like the cable that was supplied with the wireless router.

## I Am Unable to Log In to the Wireless Router

If you are unable to log in to the wireless router, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the router as described in the previous section.

- Make sure that you are using the correct login information. The factory default login name is **admin**, and the password is **password**. Make sure that Caps Lock is off when you enter this information.
- Typically, your computer's address should be in the range of 192.168.1.2 to 192.168.1.254. Refer to your computer's documentation for help with finding your computer's IP address.



If your computer's IP address is 169.254.x.x, verify that you have a good connection from the computer to the router, and then restart your computer.

- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click Refresh to be sure that the Java applet is loaded. Try closing the browser and starting it again.

## The Internet Service Connection Is Not Working

If your router is unable to access the Internet, check that the Internet connection is working, and then check that the wireless router can get an Internet address.

### Check that the Internet connection is working:

1. **Internet connection.** First verify that your cable or ADSL modem has a successful connection. The cable or ADSL modem status lights indicate if the modem connection is successful or not. Check your modem documentation, or call your Internet service provider for help with verifying that the modem has a successful connection.
2. **Wireless router Internet light is green or blinking green.** If your Internet light is green or blinking green, then you have a good Internet connection, and your wiring is correct.
3. **Wireless router Internet light blinking amber.** If your Internet light is blinking amber, then your wireless router is attempting to make an Internet connection with the service provider. The LED should turn green within several minutes. If it does not, check the Internet connection on the modem as described above.
4. **Wireless router Internet light off.** If the Internet light is off, verify that the Ethernet cable is securely connected between the cable or ADSL modem, and that both the modem and wireless router are turned on.



## Obtaining an Internet IP Address

If your wireless router is unable to access the Internet, and your Internet light is amber or blinking amber, check the wireless router to see if it is able to get an Internet IP address from your service provider. Unless you have a static IP address, your wireless router automatically requests an IP address from your service provider.

### To check the Internet IP address from the browser interface:

1. Log in to the wireless router.
2. Use the Router Status link under the Maintenance heading to check that an IP address is shown for the Internet port. If 0.0.0.0 is shown, your wireless router has not obtained an IP address from your service provider.

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

- Your service provider might require a login. Ask your service provider whether they require PPP over Ethernet (PPPoE) login.
- The service name, user name, and password might be set incorrectly. See “[Troubleshooting PPPoE](#)”.
- Your service provider might check for your computer’s host name. Assign the computer host name of your ISP account to the wireless router in the Basic Settings screen.
- Your service provider allows only one Ethernet MAC address to connect to Internet, and might check for your computer’s MAC address, in this case, do one of the following:
  - Inform your service provider that you have bought a new network device, and ask them to use the wireless router’s MAC address.
  - Configure your router to spoof your computer’s MAC address. This can be done in the Basic Settings screen. Refer to the online help in the wireless router main menu.

## Troubleshooting PPPoE

### To troubleshoot a PPPoE connection:

1. Log in to the wireless router.
2. Under the Maintenance heading, select the Router Status link.
3. Click the **Connection Status** button.
4. If all of the steps indicate OK then your PPPoE connection is up and working.

5. If any of the steps indicates Failed, you can attempt to reconnect by clicking **Connect**. The wireless router will continue to attempt to connect indefinitely.

If you cannot connect after several minutes, you might be using an incorrect service name, user name, or password. There also might be a provisioning problem with your ISP.



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

## Troubleshooting Internet Browsing

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

- Your computer might not recognize any DNS server addresses.

A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address when you configured the wireless router, restart your computer. Alternatively, you can configure your computer manually with DNS addresses, as explained in the documentation for your computer.

- Your computer might not have the wireless router configured as its default gateway.

Restart the computer, and verify that the wireless router address (192.168.1.1) is listed by your computer as the default gateway address.



The factory default wireless router address is 192.168.1.1. However, if the router detects a conflict with the address it gets from your modem, it automatically picks a different address for itself. In this case, you can log in to the router using **www.routerlogin.net** to verify its LAN IP address. Click the LAN IP Setup link in the Advanced menu. Take note of the LAN TCP/IP setup IP address, which should match the default gateway IP address on your computer.

## How Do I Restore the Default Password and Configuration Settings?

This section explains how to restore the factory default configuration settings, changing the router's administration password to **password** and the IP address to **192.168.1.1**.



This procedure will erase all the current configuration settings and restore the factory defaults.

**To restore the factory default configuration settings, use the reset button on the rear panel of the router:**

1. Use a sharp object like a pen or a paper clip to press and hold the default reset button for about 20 seconds (see “[Router Back Panel](#)” on page 4), until the Test light on the front turns on.
2. Release the reset button, and wait for the router to restart.

## Troubleshooting Connectivity Using the Ping Utility

Most computers and routers have a diagnostic utility called *ping* that sends an request to a target device. The device then replies. The ping utility makes it easy to troubleshoot a network..



This section includes advanced troubleshooting techniques.

## Testing the Path from a PC to Your Router

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

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

```
ping www.routerlogin.net  
or  
ping 192.168.1.1
```

**3. Click OK.**

You should see a message like this one:

```
Pinging 192.168.1.1 with 32 bytes of data
```

If the path is working, you see this message:

```
Reply from 192.168.1.1: 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 could have one of the following problems:

- Wrong physical connections
  - Make sure that the LAN port light is on. If the light is off, follow the instructions in [“Verify if the LAN or Internet port lights are not on when the Ethernet connection is made:”](#) on page 2-20.
  - Check that the corresponding lights are on for your computer’s network interface card.
- Wrong network configuration
  - Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.
  - Verify that the IP address for your router and your computer are correct and that the addresses on both begin with 192.168.1.0.

## Testing the Path from a PC to the Internet

After verifying that the path between your computer and the wireless router works correctly, test the path from your PC to the Internet. From the Windows Start > Run... menu, type:

```
PING -n 10 <IP address>
```

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

If the path is functioning correctly, replies as in the previous section are displayed. If you do not receive replies:

- Check that your PC has the IP address of your router listed as the default gateway. If the IP configuration of your PC is assigned by DHCP, this information is not visible in your PC's Network Control Panel. Verify that the IP address of the router is listed as the TCP/IP default gateway.
- Check to see that the network address of your PC (the portion of the IP address specified by the netmask) is different from the network address of the remote device.
- If your ISP assigned a host name to your PC, enter that host name as the account name in the Basic Settings screen.

# Technical Specifications

This section provides factory default settings and technical specifications for the Wireless Router Model WPN824N.

## Factory Default Settings

<b>Smart Wizard</b>	Enabled
<b>Router Login Default Access</b>	
Router Login URL	http://www.routerlogin.net <i>or</i> http://www.routerlogin.com
Login Name (case-sensitive) printed on product label	admin
Login Password (case-sensitive) printed on product label	password
<b>Internet Connection</b>	
WAN MAC Address	Use default hardware address
MTU Size	1500
<b>Local Network</b>	
Router Lan IP address printed on product label (also known as Gateway IP address)	192.168.1.1
Router Subnet	255.255.255.0
DHCP Server	Enabled
Time Zone	Pacific Time
Time Zone Adjusted for Daylight Saving Time	Disabled
<b>Firewall</b>	
Inbound (communications coming in from the Internet)	Disabled (bars all unsolicited requests)
Outbound (communications going out to the Internet)	Enabled (all)

## Wireless

Wireless Communication	Enabled
SSID Name	NETGEAR
Security	Disabled
Broadcast SSID	Enabled
Transmission Speed	Auto <sup>a</sup>
Country/Region	United States in the US, otherwise varies by region
Operating Mode	802.11 b/g and 802.11n
Data Rate	Best
Output Power	Full

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

## Network Protocol and Standards Compatibility

Data and Routing Protocols: TCP/IP, RIP-1, RIP-2, DHCP  
PPP over Ethernet (PPPoE)

## Power Adapter

North America: 120V, 60 Hz, input  
United Kingdom, Australia: 240V, 50 Hz, input  
Europe: 230V, 50 Hz, input  
Japan: 100V, 50/60 Hz, input  
All regions (output): 12 V DC @ 1A output, 12W maximum

## Physical Specifications

Dimensions: 223 x 153 x 31 mm (8.8 x 6 x 1.2 in.)  
Weight: 0.5 kg (1.2 lb)

### Environmental Specifications

Operating temperature: 0° to 40° C (32° to 104° F)  
Operating humidity: 90% maximum relative humidity, noncondensing

### Electromagnetic Emissions

Meets requirements of: FCC Part 15 Class B  
VCCI Class B  
EN 55 022 (CISPR 22), Class B  
C-Tick N10947

### Interface Specifications

LAN: 10BASE-T or 100BASE-Tx, RJ-45  
WAN: 10BASE-T or 100BASE-Tx, RJ-45  
Wireless: Maximum wireless signal rate complies with the IEEE 802.11 standard. Actual throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.  
Radio Data Rates: 1, 2, 5.5, 6, 9, 12, 18, 24, 36, 48, 54, MCS0, MCS1, MCS2, MCS3, MCS4, MCS5, MCS6, and MCS7 Mbps  
Auto Rate Sensing  
Frequency 2.4-2.5Ghz  
Data Encoding: 802.11b: Direct Sequence Spread Spectrum (DSSS)  
802.11g: Orthogonal Frequency Division Multiplexing (OFDM)  
Maximum Computers Per Wireless Network: Limited by the amount of wireless network traffic generated by each node. Typically 30-70 nodes.  
Operating Frequency Ranges: 2.412~2.462 GHz (US) 2.457~2.462 GHz (Spain)  
2.412~2.484 GHz (Japan)2.457~2.472 GHz (France)  
2.412~2.472 GHz (Europe ETSI)  
802.11 Security: 40-bit (also called 64-bit) and 128-bit WEP, WPA-PSK and WPA2-PSK.

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# Related Documents

This appendix provides links to reference documents you can use to gain a more complete understanding of the technologies used in your NETGEAR product.

<b>Document</b>	<b>Link</b>
TCP/IP Networking Basics	<a href="http://documentation.netgear.com/reference/enu/tcpip/index.htm">http://documentation.netgear.com/reference/enu/tcpip/index.htm</a>
Preparing Your Network	<a href="http://documentation.netgear.com/reference/enu/wsdhcp/index.htm">http://documentation.netgear.com/reference/enu/wsdhcp/index.htm</a>
Glossary	<a href="http://documentation.netgear.com/reference/enu/glossary/index.htm">http://documentation.netgear.com/reference/enu/glossary/index.htm</a>



# Registration and Certifications

## Product Registration, Support, and Documentation

Register your product at <http://www.NETGEAR.com/register>. You must register before you can use our telephone support service. Product updates and Web support are always available by going to: <http://www.netgear.com/support>.

Setup documentation is available on the CD, on the support website, and on the documentation website. When the wireless router is connected to the Internet, click the KnowledgeBase link to view support information or click the Documentation link to view the online *User Manual* for this wireless router.

## Maximum Wireless Signal Rate Derived from IEEE Standard 802.11 Specifications

Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

## Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. For products available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

**FCC Radiation Exposure Statement:** This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.