N600 Wireless Dual Band Router WNDR3300v2 Setup Manual

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Contents

Getting to Know Your Wireless Router

Congratulations on your purchase of the NETGEAR® N600 Wireless Dual Band Router WNDR3300v2.

Before you begin installing your router, check the package contents (see "Unpacking Your New Wireless Router" on page 1). Become familiar with the front and back panels of your router—especially the LEDs—and the important information on the router label (see "Hardware Features" on page 2). Then, read the section on "Positioning Your Wireless Router" on page 7 to ensure that you have selected the best location to install your router.

Unpacking Your New Wireless 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 *Reference Manual*

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).

Hardware Features

Before you install and connect your router, take a moment to become familiar with the front and back panels of the router—especially the LEDs on the front panel.
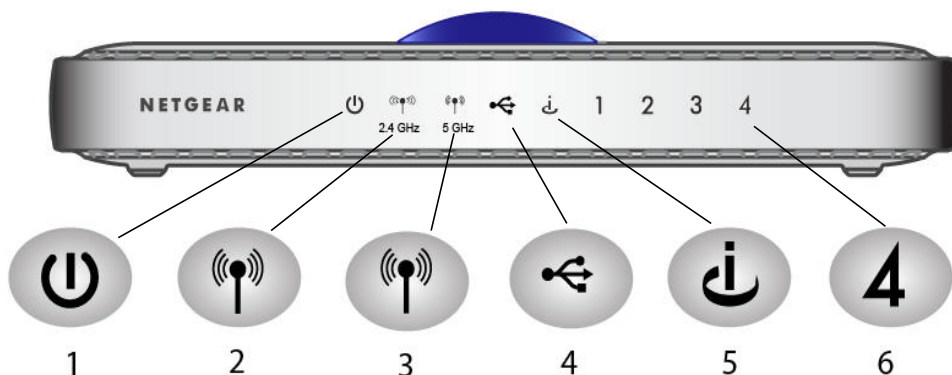
Front Panel

Figure 2

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

Table 1.   Status Light Descriptions

Item	Function	Activity	Description
1.	Power	Solid Amber	The unit is starting up after being powered on.
		Solid Green	The unit startup has completed; the unit is ready.
		Blinking Green	Firmware is corrupted. See "Checking Basic Router Functions" on page 31 for instructions on restoring your router firmware.
		Blinking Amber	1. Firmware is upgrading.
			2. Restore factory settings button pressed; restoring factory default settings.
		Off	Power is not supplied to the router.
2.	2.4 GHz Mode	Solid Green	The unit is operating in 11n mode at 2.4 GHz.
		Blinking Green	Data is being communicated over a wireless network.
		Off	The 11n mode at 2.4 GHz is off.
3.	5 GHz Mode	Solid Blue	The unit is operating in 11n mode at 5 GHz.
		Blinking Blue	Data is being communicated over the wireless network.
		Off	The 11n mode at 5 GHz is off.

Table 1.   Status Light Descriptions (continued)

Item	Function	Activity	Description
4.	USB	Solid Green	The USB device has been accepted by the Router and is ready to be used.
		Fast Blinking Green	The USB device is in use.
		Off	No USB device is connected, or the "Safely Remove Hardware" button has been pressed and it is now safe to remove the attached USB device.
5.	Internet	Off	No Ethernet cable is connected to the modem.
		Solid Amber	The Ethernet cable connection to the modem has been detected.
		Blinking Amber	Initializing connection and obtaining an IP address.
		Solid Green	An IP address has been received; ready to transmit data.
		Blinking Green	Data is being transmitted and received.
6.	LAN (Ports 1–4)	Solid Green	The LAN port has detected a 100 Mbps link with an attached device.
		Blinking Green	Data is being transmitted at 100 Mbps.
		Solid Amber	The LAN port has detected a 10 Mbps link with an attached device.
		Blinking Amber	Data is being transmitted at 10 Mbps.
		Off	No link is detected on this port.

> For more information on modes, see "Configuring Your Wireless Settings and Security Options" on page 23, and the online *Reference Manual*, available on the *Resource CD*.

Back Panel

The rear panel of the WNDR3300v2 router contains the items in the list that follows the figure.

Figure 3

The back of the wireless router includes:
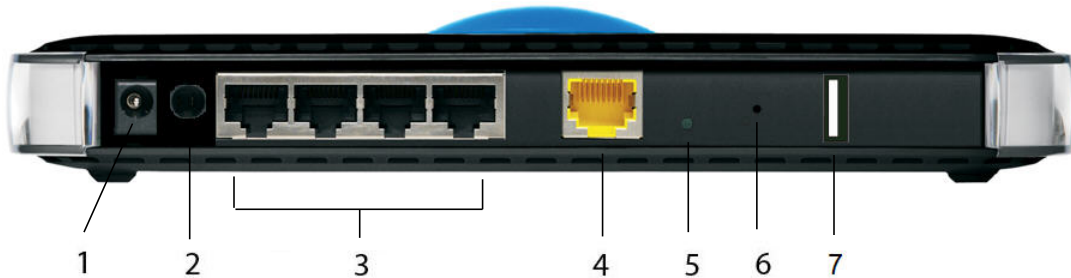
1. AC power adapter outlet

2. Power on/off button

3. Four local (LAN) 10/100 Mbps Ethernet ports for connecting the router to local computers

4. Internet (WAN) Ethernet port for connecting the router to a cable or DSL modem

5. WLAN on/off button

6. Restore factory settings button

7. USB port (backward compatible to USB 1.0/1.1) for attaching a USB storage device

Top Panel

Figure 4

The top of the wireless router includes a dome that performs two functions:

1. **Antenna display lights**. The lights identify the activity of the eight internal antennas, flashing to show which combination of antennas is receiving the strongest signals. These status lights are off by default but can be turned on.

2. **Push 'N' Connect (WPS)**. The dome acts as a push-button for the router to enable WPS security with other WPS-enabled devices. Pushing on the dome for over 5 seconds opens a 2-minute window for the router to connect with other WPS-enabled devices.

> → Before using these WiFi Protected Setup (WPS) push-button procedures, verify that your device (a notebook, adapter, or other device) supports WPS.

To use the WPS method to implement security, see "Using Push 'N' Connect (WPS) to Configure Your Wireless Network" on page 26.

To turn the antenna display lights on or off:

1. Push the dome, then release. If lights are off, they will turn on.

2. Push the dome, then release. If lights are on, they will turn off.

Router Label

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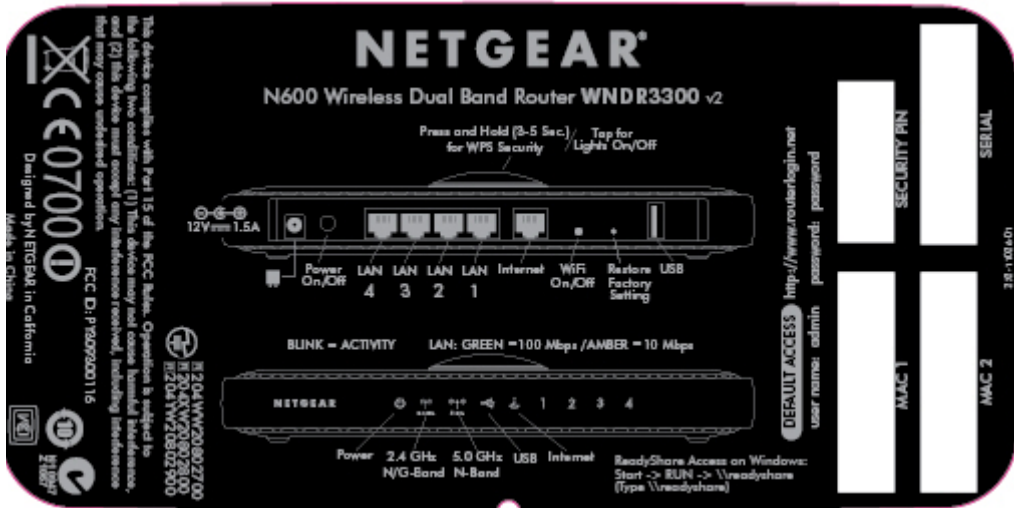

Figure 5

Positioning Your Wireless Router

The wireless router lets you access your network from virtually anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal must pass through may limit the range. For best results, place your router:

•   Near the center of the area where your computers and other devices will operate, preferably within line of sight to your wireless devices.

•   Accessible to an AC power outlet and near Ethernet cables for wired computers.

•   In an elevated location such as a high shelf, keeping the number of walls and ceilings between the wireless router and your other devices to a minimum.

•   Away from electrical devices which are potential sources of interference, such as ceiling fans, home security systems, microwaves, or the base for a cordless phone.

- Away from any large metal surfaces, such as a solid metal door or aluminum studs. Large expanses of other materials such as glass, insulated walls, fish tanks, mirrors, brick, and concrete can also affect your wireless signal.

> → Failure to follow these guidelines can result in significant performance degradation or an inability to wirelessly connect to the Internet.

Installing Your Wireless Router

To help you set up your router and get on the Internet quickly, the *Resource CD* contains a Smart Wizard™. The Smart Wizard walks you through the steps required to connect your router, microfilters, and PC(s); configure your wireless settings; and enable wireless security for your network. When you have finished, you will be Internet ready!

> → If you have a Linux system, you need to use the manual installation method (see "Installing Your Wireless Router Manually (Advanced and Linux Users)" on page 13).

You can set up your wireless router using one of two methods:

- **Smart Wizard Setup**: The Smart Wizard setup is available on your *Resource CD*. See "Installing Your Wireless Router Using Smart Wizard" on page 10 to use the Smart Wizard.

  This is the easiest option. The wizard guides you through the setup process. It automates many of the steps and verifies that the steps have been successfully completed.

  > → Before running the Smart Wizard on a corporate PC to set up your home router, check with your company's network support staff. Corporate network settings or Virtual Private Network (VPN) client software may conflict with the default settings of a home router. If you are unsure about whether there might be a conflict, use a different computer.

- **Manual Setup**: If you cannot or prefer not to use the Smart Wizard, see "Installing Your Wireless Router Manually (Advanced and Linux Users)" on page 13. For example, if you are connecting to a Linux operating system, or are technically knowledgeable, select this option. If you choose to use this option and install your router manually, for best results, install and set up your router in this order:

  1. Install and connect your wireless router to your network (see "Connecting Your Wireless Router" on page 13).

2. Set up your wireless router for Internet access (see "Setting Up Your Router for Internet Access" on page 17).

3. Configure your wireless network and select wireless security settings to protect your wireless network (see "Configuring Your Wireless Network" on page 21).

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 (see the *Reference Manual* for details).

These options are discussed in "Accessing Your Router After Installation and Checking for New Firmware" on page 21.

Installing Your Wireless Router Using Smart Wizard

Prepare the following before you set up your router make sure that:

- You are using a PC with either a Mac operating system or a Windows operating system (Windows 7, Windows Vista, Windows 2000, or Windows XP with Service Pack 2); and a wired Ethernet connection, not a wireless connection.

- You have an Internet service connection through an Internet Service Provider (ISP).

- Your PC has a wired Ethernet connection (not a wireless connection).

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

The NETGEAR Smart Wizard takes you through the procedure to connect your router and PC(s). It then helps you to configure your wireless settings and enable wireless security for your network. The Smart Wizard guides you through the setup and configuration process by automating many of the steps. At each step in the setup process, the Smart Wizard checks to ensure that the steps you perform are successfully completed.

The wizard setup process takes about 20 minutes to complete.

To set up your router using the Smart Wizard:

1. To start the Smart Wizard:

    - **For Windows users**,

        – Insert the *Resource CD* into your PC. The CD will automatically start and detect the language you are using on your PC. Select a different language option, if you prefer.

            > If the CD does not automatically start, browse the CD and double-click on 🔳.

        – In the CD's menu, click **Setup** to start the Smart Wizard.

    - **For Mac users**, double-click the MacWizard program.

2. When the Smart Wizard prompts you to Check for Firmware Updates, click **Yes** to check the NETGEAR website for new router firmware; or check **No** to check for updates later (see "Accessing Your Router After Installation and Checking for New Firmware" on page 21).

3. Follow the instructions and prompts to complete the installation.

    The Smart Wizard guides you through installing your router, connecting your router to the Internet, configuring your wireless network settings, and selecting the optimum security protection for your network. If you choose not to select a security option during installation, you can always access the router's user interface later to select a security option (see "Setting Your SSID and Wireless Security" on page 24 or "Using Push 'N' Connect (WPS) to Configure Your Wireless Network" on page 26).

    > ➡️ To ensure optimum performance of your high-speed wireless router, the wireless adapter card for each computer in your network should support the same technology as your router (see the online *User Manual* for more information).

    At the close of installation:

    *   **For Windows users**, the Smart Wizard places a *Router_Setup.html* file on your computer's desktop so that you can view the router settings. It also places the Router Login 🔷 shortcut on the desktop for you to access the router's main menu.

    *   **For Mac users**, the Smart Wizard places a Router_Setup.pdf file on your desktop.

    You are now connected to the Internet!

After connecting to the Internet, you can:

*   Log in to the router and check for new firmware. Refer to the bottom label for the default login information, or see the steps in "Accessing Your Router After Installation and Checking for New Firmware" on page 21.

*   Set up additional wireless computers in your network for Internet access (see "Configuring Your Wireless Settings and Security Options" on page 23).

For advanced features not covered in this manual, see the *Reference Manual* on your *Resource CD*. A link to the online *Reference Manual* also is available from the router interface.

> ➡️ The factory default state is restored when you use the restore factory settings button. See "Restoring the Default Password and Configuration Settings" on page 42 for more information about this feature.

Installing Your Wireless Router Manually (Advanced and Linux Users)

Before installing and connecting your router manually, review the list below and make sure that you have all of the necessary information.

• Internet ADSL or cable modem service connection to an Internet Service Provider (ISP).

• The configuration information your ISP gave you. Depending on how your Internet account was set up, you might need the following information to set up your wireless router and access the Internet:

  – Host and Domain Name

  – Internet Login Name and Password (frequently an email 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, ask your ISP.

If you have not already done so:

• Check the package contents of your router to ensure that it is complete (see "Unpacking Your New Wireless Router" on page 1").

• Select an optimum location for your wireless router after reviewing the guidelines presented in "Positioning Your Wireless Router" on page 7."

Connecting Your Wireless Router

Before you install your wireless router, make sure that the Internet Protocol (TCP/IP) Property settings on your computer are set to "automatically obtain an IP address" using DHCP and "Obtain DNS server address automatically." You can check these settings by looking at the TCP/IP Properties of your Internal Network Connections, which are accessible through the Control Panel

of your computer. If you are unsure about this, refer to the documentation for your computer or see the link to TCP/IP Addressing in "Related Documents" on page 43.

> → If you are replacing an existing router, disconnect it completely from your network and set it aside before starting to install your new router.

There are two steps to setting up your wireless router:

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

2. Configure the router to use your Internet service.

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.
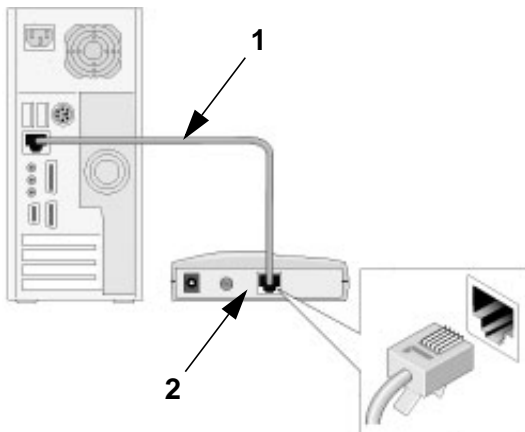
Figure 6

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

3. 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**).
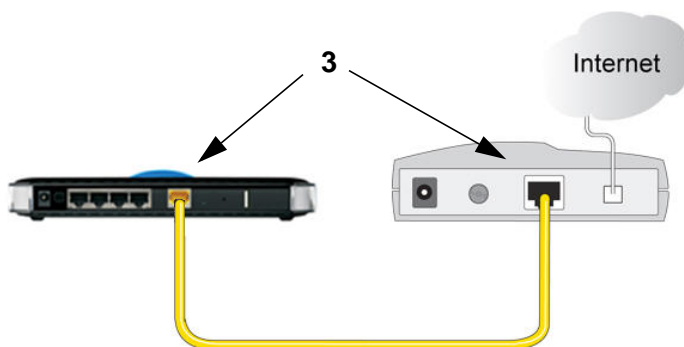
Figure 7

4. Locate the cable you removed from the modem in step 2. Securely insert that cable (**4**) into a LAN port on the router such as LAN port 1.
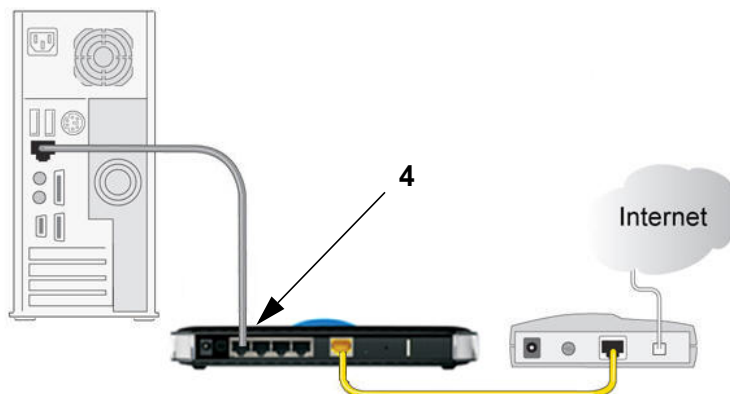
Figure 8

Your network cables are connected, and you are ready to start your network. It is important that you start your network in the correct sequence.

To 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.

1. First, plug in and turn on the cable or DSL modem. Wait 2 minutes.

2. Now, plug the power cord into your wireless router and into a power outlet. Wait 1 minute.

3. Last, turn on your computer. It might take several minutes for your router to establish a connection with your computer and your Internet provider.

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

Verifying Your Connection

Verify that your router is connected correctly by checking the wireless router status lights (as illustrated in Figure 9.
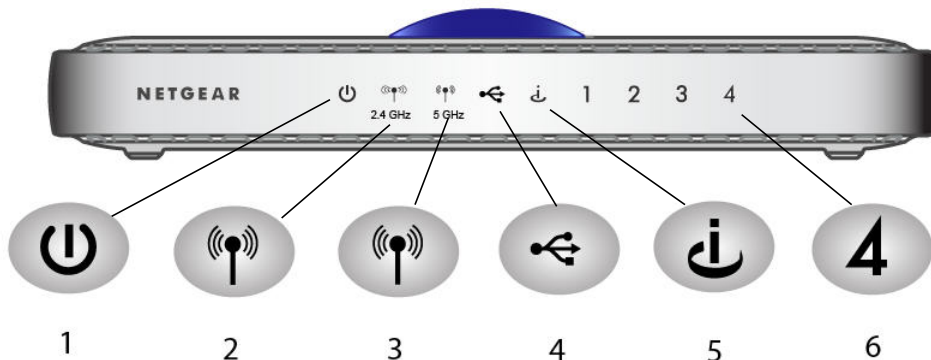
Figure 9

Check the wireless router status lights to verify the following:

- **Power**. The Power light (**1**) should turn solid green. If it does not, see "Checking Basic Router Functions" on page 31.

- **Operating Mode**. The 2.4 GHz N-Band light (**2**) should be on; the 5.0 GHz N-Band light (**3**) should be off.

- **USB.** The USB light (**4**) should be off if no USB device is connected; it will be solid green if a USB device is connected.

- **Internet**. The Internet port light (**5**) 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 that the modem is powered on.

- **LAN**. A LAN light (**6**) 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.

Setting Up Your Router for Internet Access

When configuring your wireless router manually, you must log in to your wireless router to set it up initially and to make any changes to your wireless router's settings later.

> The factory default state is reset when you use the Restore Factory Settings button. See "Restoring the Default Password and Configuration Settings" on page 42 for more information.

To access your router:

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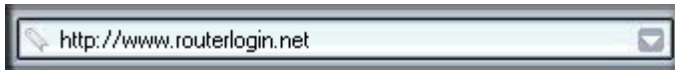
http://www.routerlogin.net

Figure 10

> Connect to the wireless router by typing any one of these three URLs in the address field of your browser, then pressing **Enter**:
> • **http://www.routerlogin.net**
> • **http://www.routerlogin.com**
> • **http://192.168.1.1**

A login window such as the one in the following figure opens:

Figure 11

2. 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 lowercase letters.

> ➡️ The router user name and password are not the same as any other user name or password you might use to log in to your Internet connection.

The Firmware Upgrade Assistant screen will display.

3. Click **Yes** to check for new firmware (recommended). The router will automatically check the NETGEAR database for a new firmware image file. If no new firmware version is available, the message "No New Firmware Version Available" will display. (If you select "No", you can check for new firmware later; see the online *User Manual*).

4. If new firmware is available, click **Yes**, and the router will automatically upgrade itself with the latest firmware.

> ⚠️ 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 and the Ready light has stopped blinking for several seconds!

5.   From the main menu, select **Setup Wizard**. The **Setup Wizard** screen will display.

Setup Wizard

The Smart Setup Wizard Can Detect The Type Of Internet Connection That You Have.
Do You Want The Smart Setup Wizard To Try And Detect The Connection Type Now?

○ Yes.
◉ No. I Want To Configure The Router Myself.
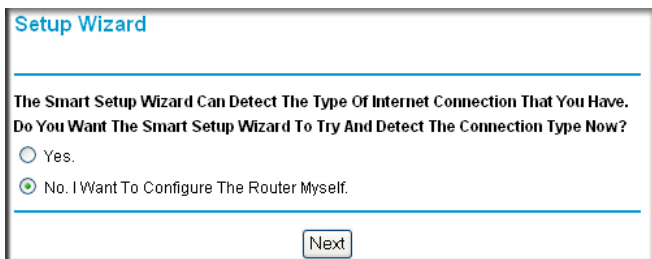
[Next]

   Figure 12

6.   Select **No** to set up the connection yourself. Click **Next** and the **Basic Settings** screen will display. Enter the required information for your ISP connection in the appropriate fields. If you need assistance, follow the **Basic Settings Help** screens on the router interface or see the online *User Manual* for this wireless router.

> → If you cannot connect to the wireless router, check the Internet Protocol (TCP/IP) properties in the Network Connections section of your Control Panel. It should be set to obtain *both* IP and DNS server addresses automatically. For assistance, see your computer documentation or see the links in "Related Documents" on page 43.

7.   Click **Apply** to save your settings and complete your connection**.**

You are now connected to the Internet! The wireless router home page will display.

To complete your router setup and to configure your wireless network, see "Accessing Your Router After Installation and Checking for New Firmware" on page 21 and "Configuring Your Wireless Settings and Security Options" on page 23.

If you do not connect successfully:

- Review your settings and make sure that you have selected the correct options and typed everything correctly.

- Contact your ISP to verify that you have the correct configuration information.

- Read "Troubleshooting" on page 30.

If problems persist, register your NETGEAR product and contact NETGEAR Technical Support.

Configuring Your Wireless Network

After installing your router, you must log into the router to complete your wireless setup. When you log in to the browser, you will be prompted to check for firmware updates from the NETGEAR update server.

Accessing Your Router After Installation and Checking for New Firmware

The Smart Wizard only appears 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, you can click the desktop shortcut—a preconfigured shortcut 📶 placed on your desktop by the Smart Wizard at installation—to open the router management interface.[1] You can also change your settings, or configure your wireless and security settings, by opening a browser window and logging in to the router. You will also be prompted to check for new router firmware to the router. You will also be prompted to check for new router firmware.

To log in to the router after installation:

1. Open a browser window and type **http://www.routerlogin.net** in the address field of your browser. Press **Enter**.

> 💡 You can enter either of these addresses to connect to your wireless router:
> **http://www.routerlogin.net** or **http://www.routerlogin.com.**

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1. The shortcut icon is installed on your desktop only when using the Smart Wizard installation method.

A login window similar to the one shown below will display.

Figure 13

2. When prompted, enter the default Password (**admin** is the default router User Name and **password** is the default router Password), both in lowercase letters. If you changed the Password from the defaults, then enter your new Password.

> → The router User Name and Password are unique to the router and are not the same as any other User Name or Password you may use to log in to your Internet connection.

The **Firmware Upgrade Assistant** screen will display.

3. Click **Yes** to check for new firmware (recommended)**.** The router will automatically check the NETGEAR database for a new firmware image file. If no new firmware version is available, the message "No New Firmware Version Available" will display. (If you selected "No," you can check for new firmware later; see "Configuring Your Wireless Settings and Security Options" on page 23.)

4. If new firmware is available, click **Yes**, and the router will automatically upgrade itself with the latest firmware.

> ⚠ 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 and the Ready light stops blinking!

Configuring Your Wireless Settings and Security Options

The wireless network settings of the router must match the wireless network settings of any wireless devices that connect wirelessly to the router (such as wireless adapter cards and wireless computers).

For a wireless connection, the router and each wireless computer must use the same SSID, also called the wireless network name, and the same wireless security. NETGEAR strongly recommends that you use wireless security.

> ⚠️ Indoors, computers can connect over wireless networks at a range of several hundred feet. This can allow others outside of your immediate area to access your network.

The Wireless Settings screen lets you set your wireless network connections and the wireless security option for your network and router. To configure the wireless network, you can either manually specify your network name (SSID) and your wireless security settings (see "Setting Your SSID and Wireless Security" on page 24) or, if the clients in your network are WPS capable, you can use Wi-Fi Protected Setup (WPS) to automatically configure your router and, at the same time, add the WPS-capable devices to your secure wireless network (see "Using Push 'N' Connect (WPS) to Configure Your Wireless Network" on page 26). You can also use Push 'N' Connect (WPS) to add WPS-capable devices after you have set your SSID and wireless security using the manual or traditional method (the preferred option).

> ➡️ If you configure the router from a wireless computer and you change the router's SSID, channel, or security settings, you will lose your wireless connection when you click **Apply**. You must then change your computer's wireless settings to match the router's new settings. To avoid this situation, you can use a computer that is connected to the router with an Ethernet cable.

For a complete overview of all the security configurations that can be implemented on this router, see the online *User Manual*. A link to the *User Manual* is on the *Resource CD*.

Setting Your SSID and Wireless Security

To specify the wireless settings, you must know the following:

- Name (2.4GHz b/g/n SSID). The default is **NETGEAR**.

- Name (5GHz a/n SSID). The default is **NETGEAR-5G**.

- The wireless mode (802.11n) that each wireless adapter supports. The default is **Up to 300 Mbps at 5 GHz and 145 Mbps at 2.4 GHz**.

- Wireless security option. NETGEAR strongly recommends that you use wireless security. To successfully implement wireless security, check each wireless adapter to determine which wireless security option it supports.

To set up basic wireless connectivity:

1. Log in to the Router by going to **http://www.routerlogin.net** or **http://www.routerlogin.com** and entering the default user name **admin** and default password **password**, or using whatever LAN address and password you have set up.

2. Select **Wireless Settings** under Setup in the main menu to display the Wireless Settings screen.

3. Select the region in which the wireless interface will operate.

4. Set up the 2.4 GHz wireless network:

   a. Enter the SSID name. The default is **NETGEAR**.

   b. Select the operating channel for the wireless mode. The default is Auto. When Auto is selected, the router finds the best operating channel available.

   If you notice interference from nearby devices, you can select a different channel. Channels 1, 6, and 11 will not interfere with each other.

   c. Leave the wireless mode set to the default setting of **Up to 145Mbps** for 2.4GHz.

5. Select security options for the 2.4GHz wireless network.

   The wireless Security Options are set to **None** by default. NETGEAR strongly recommends that you use wireless security. You can select a different Security Option and a different passphrase for each wireless network. For the highest performance of the 2.4GHz wireless network and the most secure encryption, NETGEAR recommends that you use **WPA2-PSK** as your security option.

6. Set up the 5GHz wireless network:

   a. Enter the SSID name. The default is **NETGEAR-5G**.

b. Select the operating channel for the wireless mode. The default channel is 36. If there is an Auto option in the channel list and you select it, the router will find the best operating channel available.

If you notice interference from nearby devices, you can select a different channel.

c. Leave the wireless mode set to the default setting of **Up to 300Mbps** for 5GHz.

7. Select security options for the 5 GHz wireless network.

The wireless Security Options are set to **None** by default. NETGEAR strongly recommends that you use wireless security. You can select a different Security Option and a different passphrase for each wireless network. For the highest performance of the 5 GHz wireless network and the most secure encryption, NETGEAR recommends that you use **WPA2-PSK** as your security option.

8. Click **Apply** to save your changes.

> If you are configuring the router from a wireless computer and you change the router'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 router's new settings.

To set up your computers for wireless connectivity:

1. Program the wireless settings of each computer or wireless adapter to have the same SSID (wireless network name) as the router.

2. Check that the wireless adapter on each computer can support the mode and security option that you selected. (If you have a question, see the online *User Manual* or review the settings you selected in "Configuring Your Wireless Settings and Security Options" on page 23).

3. Check that the security settings on each wireless device match the security settings of the router. For example, if you selected a security option requiring a passphrase, then the same passphrase must be used for each wireless computer.

4. Check that each wireless computer has a wireless link and is able to obtain an IP address by DHCP from the router.

> For a Windows PC, go to the Control Panel and select **Network Connections**. For an Apple PC, select **Menu > Control Panels** and select **Network Connections**.
> Check the Wireless Connections Properties and ensure that TCP/IP Properties are set to Obtain an IP address automatically.

To access the Internet from any computer connected to your wireless router, launch a browser such as Microsoft Internet Explorer or Mozilla Firefox. You should see the wireless router's Internet LED blink, indicating communication to the ISP.

Using Push 'N' Connect (WPS) to Configure Your Wireless Network

If your wireless clients support Wi-Fi Protected Setup (WPS), you can use this feature to configure the router's SSID and security settings and, at the same time, connect the wireless client securely and easily to the router. Look for the 🌐 symbol on your client device.[1] WPS automatically configures the SSID and wireless security settings for the router (if the router is in its default state) and broadcasts these settings to the wireless client.

> ➡️ NETGEAR's Push 'N' Connect feature is based on the Wi-Fi Protected Setup (WPS) standard. All other Wi-Fi-certified and WPS-capable products should be compatible with NETGEAR products that implement Push 'N' Connect.

If the router has already been configured manually, and either WPS-PSK or WPA2-PSK security has been enabled, a wireless client can be connected quickly and simply by using the WPS method of connecting to the wireless network. In this case, the existing wireless settings are broadcast to the WPS-capable client. (For more information on setting up a mixed network, see the online *User Manual.* A link to the *User Manual* is on the *Resource CD*.)

> ➡️ If you choose to use WPS, the only security methods supported are WPA-PSK and WPA2-PSK. WEP security is not supported by WPS.

The following instructions assume that you are configuring WPS on the router for the first time and connecting a WPS-capable device such as a wireless computer or wireless adapter.

To connect a device using WPS:

1. Open the networking utility of the device you want to connect to that supports WPS.

2. Push the wireless router's dome for 5 seconds, then release. The dome lights will start to blink.

---

1. For a list of other Wi-Fi-certified products available from NETGEAR, go to *http://www.wi-fi.org*.

While the router is in WPS enable mode (a maximum of 2 minutes), wireless security is not enabled.

> ⚠️ Indoors, computers can connect over wireless networks at a range of several hundred feet. Unlike wired network data, your wireless data transmissions can extend beyond your walls, and anyone with a compatible adapter can receive them, allowing others outside your immediate area to access your network.

3. While the dome lights are blinking, you have 2 minutes to enable WPS on the device you are connecting to. The blinking ceases when one of these two conditions occurs:

   - WPS has enabled security between the router and the other device.The router has generated an SSID, implemented WPA/WPA2 wireless security (including a PSK security password) on the router and has sent this configuration to the wireless client.

   - The 2-minute window period expires for establishing a connection using WPS. Whether or not a connection is established, your router security and SSID (wireless network name) are now configured for WPA/WPA2 security.

   The dome lights will stop blinking or turn off, depending on how you have them configured.

4. Note the new SSID and WPA/WPA2 password for the wireless network.

To access the Internet from any computer connected to your wireless router, launch a browser such as Microsoft Internet Explorer or Netscape Navigator. You should see the wireless router's Internet LED blink, indicating communication to the ISP.

> → If you are planning a mixed network of WPS capable devices and non-WPS capable devices, NETGEAR suggests that you set up your wireless network and security settings manually first, and use WPS only for adding additional WPS capable devices.

For more information about setting up your wireless network and configuring your wireless security settings, see the *User Manual*. A link to the online *User Manual* is on your *Resource CD*.

> → If you want to disable WPS, you must reset your router to its factory default settings. For information about resetting to the default settings, see "Restoring the Default Password and Configuration Settings" on page 42.

Testing Basic Wireless Connectivity

Once you have established basic wireless connectivity and enabled security settings appropriate to your needs, you can test connectivity between devices connected to your router.

To test basic wireless connectivity:

1. Log in to the wireless router at its default LAN address of **http://192.168.0.1** with its default user name of **admin** and default password of **password**, or using whatever LAN address and password you have set up.

2. Select **Wireless Settings** from the main menu of the wireless router.

3. Note your SSID name. If you used WPS to establish a connection with other devices, the SSID will now be a randomly selected name.

    > → The SSID of any wireless adapters or wireless devices connected to your router must match the SSID you configured in the wireless router. If they do not match, you will not get a wireless connection.

4. Make sure that you have selected the region in which the wireless router will operate.

5. Check the Wireless mode. The default is **Up to 300Mbps at 5GHz & 145Mbps at 2.4GHz.** If you are experiencing interference, try selecting one of the other available settings (see "Configuring Your Wireless Settings and Security Options" on page 23).

6. Check your wireless security. If you used WPS to enable wireless security, your security will be set to WPA/WPA2 with a randomly-selected PSK security password.

7. Click **Apply** to save any changes.

    > → If you are configuring the router from a wireless computer and you change the router'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 router's new settings.

8. 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 and the same wireless security as your wireless router. Check that they have a wireless link and are able to obtain an IP address by DHCP from the router.

Your wireless router is now configured to provide Internet access for your network. Your wireless router automatically connects to the Internet when one of your computers requires access. It is not necessary to run a dialer or login application such as Dial-Up Networking or Enternet to connect, log in, or disconnect. These functions are performed automatically by the wireless router as needed.

To access the Internet from any computer connected to your wireless router, launch a browser such as Microsoft Internet Explorer or Mozilla Firefox. You should see the wireless router's Internet LED blink, indicating communication to the ISP. The browser should begin to display a Web page.

Troubleshooting

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

Basic Setup Checklist

The following items are the most common errors made when initially setting up a router. Carefully review the checklist to make sure that you have followed the recommended procedures.

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 is 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 "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 "Front Panel" on page 3). The label on the bottom of the wireless router identifies the number of each LAN port (see "Router Label" on page 7).

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 43.

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 this is the case, in the Router MAC Address section of the Basic Settings screen, 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 "Restoring the Default Password and Configuration Settings" on page 42.

Checking Basic Router Functions

After you turn on power to the router, check that the following sequence of events has occurred:

1. When power is first applied, verify that the Power light is on (see "Front Panel" on page 3 for an illustration).

2. Verify that the Power light turns amber within a few seconds, indicating that the self-test procedure is running.

3. After approximately 20 seconds, verify that:

    a. The color of the Power light changes to green.

    b. The LAN port lights are lit for any local ports that are connected.

       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 will be amber.

    c. The Internet port is connected and its light is lit.

4. If you have enabled WPS security, verify that the dome light stops blinking and turns off (unless you have configured the dome light to stay on).

If the correct behavior does not occur, check for a remedy from the following table.

Table 2.   Troubleshooting the router's LED behavior

LED Behavior	Recommended Action
Power light is off.	See "Connecting Your Wireless Router" on page 13), check the following: • Make sure that the power cord is properly connected to your router and that the power adapter is properly connected to a functioning power outlet. • 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.
Power light stays amber.	When the router is turned on, the Power light turns amber for about 20 seconds and then turns green. If the light does not turn green, the router has a problem. If the Power light is still amber 1 minute after turning on power to the router: 1. Turn the power off and back on to see if the router recovers. 2. Clear the router's configuration to factory defaults. This will set the router's IP address to 192.168.1.1. This procedure is explained in "Restoring the Default Password and Configuration Settings" on page 42. If the error persists, you might have a hardware problem and should contact technical support.
Power light blinks green slowly and continuously.	The router firmware is corrupted. To restore your firmware: 1. Make sure that your PC is connected to your router and the router is powered on. 2. Insert the *Resource CD* that came with your router into your PC. The CD automatically starts and detects the language you are using on your PC. Select a different language option, if you prefer. If the CD does not automatically start, browse the CD and double-click on ![N icon] . 3. Click **Supporting Software**, then **Netgear Firmware Recovery Utility**, and follow the prompts for the recovery process. 4. After firmware recovery is complete, follow the prompts to restore your configuration

Table 2.   Troubleshooting the router's LED behavior (continued)

Internet light stays amber.	When the router is turned on, the Internet light turns amber for about 20 seconds and then turns green. If the light does not turn green, the router has a problem.
	If the Internet light is still amber 1 minute after turning on power to the router:
	1. The Internet is not accessible. Confirm that you have the correct internet setting.
	2. Clear the router's configuration to factory defaults. This will set the router's IP address to 192.168.1.1. This procedure is explained in "Restoring the Default Password and Configuration Settings" on page 42.
	3. Turn the power off and back on to see if the router recovers.
Internet or LAN port lights are off.	If either the LAN or Internet lights do not light when the Ethernet connection is made, check the following:
	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. Be sure you are using Ethernet cables like the cable that was supplied with the wireless router.
	See "Connecting Your Wireless Router" on page 13 for instructions.

For more information on WPS functionality and advanced features, see the online *Reference Manual.*

Troubleshooting Login Problems

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.

Checking The Internet Service Connection

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 light should turn green within several minutes. If it does not, check the Internet connection on the modem.

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. Select **Router Status** under Maintenance on the main menu 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, which you can access from the wireless router main menu.

Troubleshooting PPPoE

To troubleshoot a PPPoE connection:

1. Log in to the wireless router.

2. Select **Router Status** under Maintenance on the main menu.

3. Click the **Connection Status** button.

4. If all the steps indicate OK, then your PPPoE connection is up and working.

5. If any of the steps indicate 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 IP 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. Select **LAN IP Setup** under Advanced on the main menu. Take note of the LAN TCP/IP setup IP address, which should match the default gateway IP address on your computer.

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.

To ping the wireless router:

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 "Front Panel" on page 3.

     – 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 255.255.255.0.

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

Default Configuration Settings

This section provides factory default settings and technical specifications for the N600 Wireless Dual Band Router WNDR3300v2.

Table 3.   Wireless Router Default Configuration Settings

Feature		Default Setting
Smart Wizard		Enabled
Router Login		
	Router Login URL	http://www. routerlogin.net *or* http://www.routerlogin.com
	Login name (case-sensitive) printed on product label	admin
	Login password (case-sensitive) printed on product label	password
Internet Connection		
	WAN MAC address	Use default hardware address
	MTU Size	1500
Local Network		
	Router LAN IP address printed on product label (also known as modem 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

Table 3.   Wireless Router Default Configuration Settings (continued)

Feature		Default Setting
Firewall		
	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
	Name (2.4GHz g/b/n SSID)	NETGEAR
	Name (5GHz a/n SSID)	NETGEAR-5G
	Security	Disabled
	Broadcast SSID	Enabled
	Country/Region	United States in the US, otherwise varies by region
	11N 5GHz Channel	36/5.180GHz
	11N 2.4GHz Channel	Auto[a]
	Operating Mode	Up to 300 Mbps at 5GHz and 145 Mbps at 2.4GHz[b]
	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. b. Configurable to 300 Mbps at 2.4GHz.		
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 @ 1.5A output, 18W maximum

Table 3.   Wireless Router Default Configuration Settings (continued)

Feature	Default Setting
Physical Specifications	
Dimensions	28 x 175 x 119 mm (1.1 x 6.89 x 4.68 in.)
Weight	0.5 kg (1.2 lb)
Environmental Specifications	
Operating temperature	0° to 40° C (32º to 104º 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	Auto Rate Sensing
Frequency	2.4 GHz & 5 GHz
Data Encoding	Standards IEEE 802.11n, IEEE 802.11g, IEEE 802.11b 2.4 GHz IEEE 802.11n, IEEE 802.11g 5.0 GHz
Maximum Computers Per Wireless Network	Limited by the amount of wireless network traffic generated by each node. Typically 30-70 nodes.
Operating Frequency Ranges (2.4G)	2.412–2.462 GHz (US) 2.412–2.472 GHz (Japan) 2.412–2.472 GHz (Europe ETSI)

Table 3.   Wireless Router Default Configuration Settings (continued)

Feature		Default Setting
	Operating Frequency Ranges (5G)	5.18–5.24 + 5.745–5.825 GHz (US)
		5.18–5.24 GHz (Europe ETSI)
	802.11 Security	40-bit (also called 64-bit) and 128-bit WEP, WPA-PSK and WPA2-PSK.

Restoring the Default Password and Configuration Settings

You can restore the factory default configuration settings that reset the router's user name to **admin,** the 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:

1. Use a sharp object such as a pen or a paper clip to press and hold the restore factory settings button, located on the rear panel of the router, for about 5 seconds, until the Power light begins to blink (see "Back Panel" on page 5).

2. Release the restore factory settings button, and wait for the router to restart, and for the Power light to stop blinking and become solid green.

   The factory default settings will be restored so that you can access the router from your Web browser using the factory defaults.

Related Documents

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

Document	Link
TCP/IP Networking Basics	*http://documentation.netgear.com/reference/enu/tcpip/index.htm*
Preparing Your Network	*http://documentation.netgear.com/reference/enu/wsdhcp/index.htm*
Glossary	*http://documentation.netgear.com/reference/enu/glossary/index.htm*

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 *Reference 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.