

Wireless Router Setup Manual



NETGEAR®

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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 Gigabit Router WNR3500.

Before you begin installing your router, check the package contents (see “[Unpacking Your New Router](#)” on page 1). Become familiar with the front and back panels of your router—especially the status lights—and the important information on the router label (see “[Unpacking Your New Router](#)” on page 1). Then, read the section on “[Positioning Your Wireless Router](#)” on page 4 to ensure that you have selected the best location to install your router.

Unpacking Your New Router

Your 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
- 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*
- 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 both sides of your router (see [Figure 1](#)).

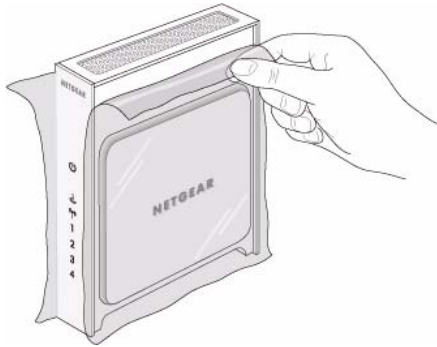


Figure 1

2. Set up your wireless router by inserting the tabs of the stand (supplied with your router) into the slots on the bottom of your router as shown in [Figure 2](#). Then, remove the protective film covering the front panel of the router.



Figure 2

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



To ensure proper heat dissipation and for router stability, it is important that you connect the stand and place your router in an upright position.

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 status lights on the front panel.

Front Panel

The lights on the front panel indicate the operating status of the router. A description of status light behavior is included in [Figure 3](#). (For more information on interpreting the status lights, see “[Checking Basic Router Functions](#)” on page 30.)

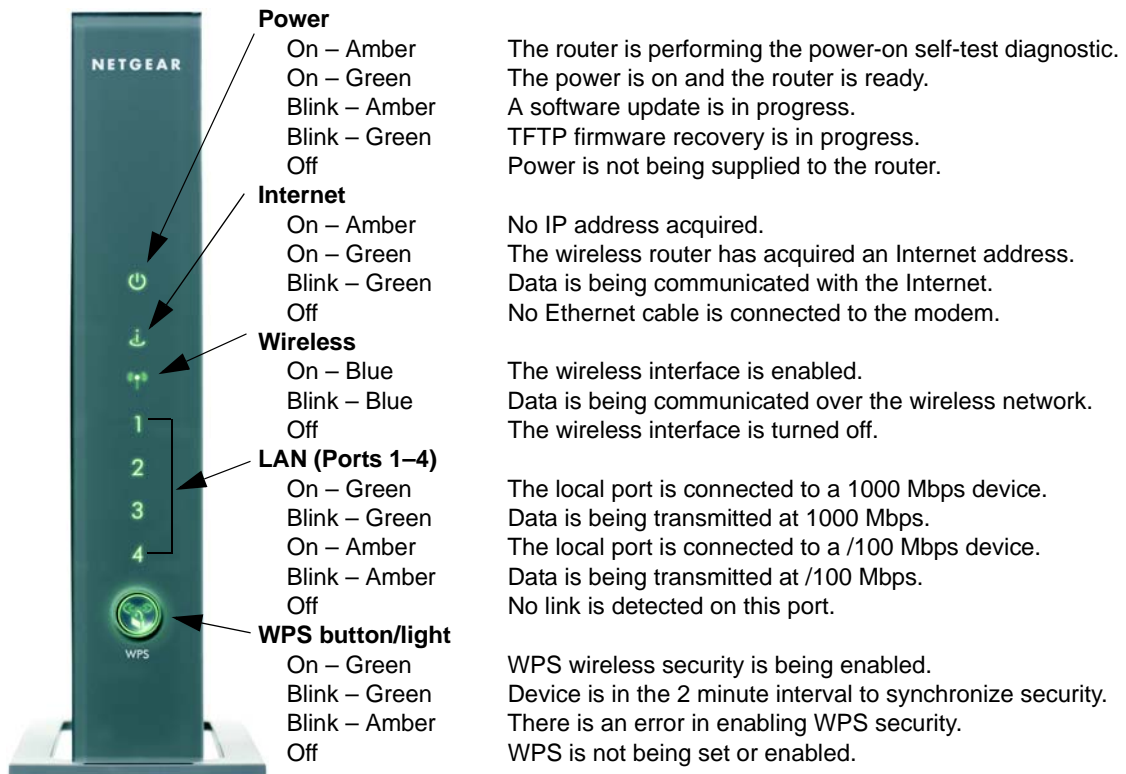


Figure 3

Back Panel

[Figure 4](#) describes the port connections on the back panel of the wireless router.

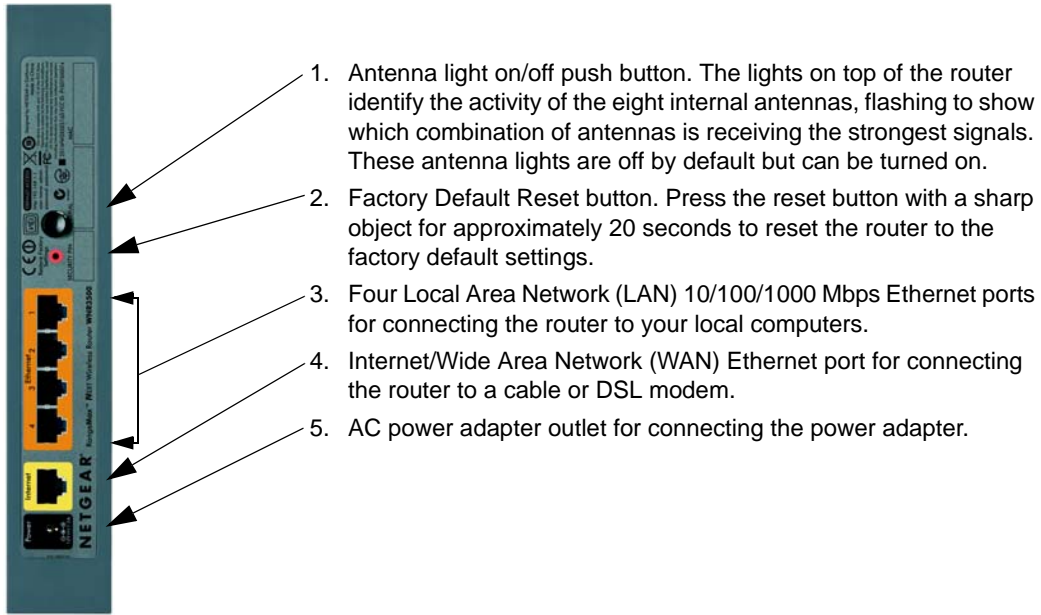


Figure 4

Router Label

The label on the back of the wireless router shows the router’s MAC address, serial number, security PIN, and factory default login information.

The ports on the router are color-coded to distinguish your Internet port from the other four ports that connect to the wired computer(s) on your LAN.

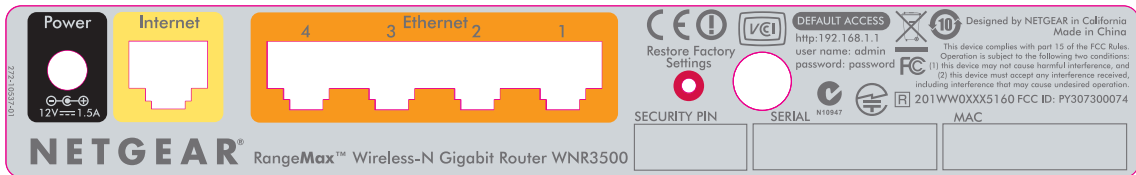


Figure 5

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, modem, 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 Macintosh or Linux system, you need to use the manual installation method (see [“Manually Installing Your Router” on page 15](#)).

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 Router Using the Smart Wizard” on page 9](#) 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.

- The Smart Wizard requires a PC running Microsoft Windows.



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 [“Manually Installing Your Router” on page 15](#). For example, if you are connecting to a Macintosh, are using 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 16](#)).
 2. Set up your wireless router for Internet access (see [“Setting Up Your Router for Internet Access” on page 19](#)).
 3. Check for new firmware for your router and install the latest firmware version (see [“Checking for New Firmware” on page 21](#)).
 4. Configure your wireless network and select wireless security settings to protect your wireless network (see [“Configuring Your Wireless Settings and Security Options” on page 23](#)).

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.
- NETGEAR provides a Windows software utility that will let you easily manage keeping your NETGEAR products up to date.

These options are discussed later in [“Accessing Your Router After Installation and Checking for New Firmware”](#) on page 10.

Installing Your Router Using the Smart Wizard

To use the Smart Wizard, you must be using a PC with Windows Vista, or Windows 2000 or Windows XP with Service Pack 2. The Smart Wizard setup procedure should take about 15 minutes to complete. Before using the Smart Wizard to set up your router, ensure that:

- You have an Internet service connection through an Internet Service Provider (ISP).
- You have the configuration information provided by your ISP.
- If you are connected through a cable modem, you are using the computer that you initially used to set up your Internet account.


Using the Smart Wizard

The NETGEAR Smart Wizard takes you through the procedure to connect your router, modem, 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 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.

To install your router using the Smart Wizard:

1. Insert the *Resource CD* into your Windows 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 .

2. When the **Welcome** screen appears, click **Setup** to start the Smart Wizard. 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 “[Accessing Your Router After Installation and Checking for New Firmware](#)”).



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).

You are now connected to the Internet!

To set up additional wireless computers in your network to access the router and connect to the Internet, see “[Setting Up Your Wireless Computers](#)” on page 26.

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 using the Smart Wizard, you must open a browser window and log in 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**.

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



Figure 6

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.



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 Update 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 [“To manually check for new router firmware:”](#) on page 12.)
4. If new firmware is available, you will be directed to the new firmware version on the NETGEAR website. Click **Right-click and Save to Download** and save the file to a location on your hard disk.

Usually the firmware image is an .img (or .chk) file and does not need to be decompressed before you can use it to upgrade your router. If, however, the file is a .zip file, then the image is compressed and must be “unzipped” before you can use the file. On Windows machines, the WinZip utility can be used to unzip the file.

To upgrade your router:

1. If the Firmware Update screen does not display automatically, select **Firmware Update** under Management on the main menu. The Firmware Update screen will then display.
2. Click **Browse** and locate the unzipped firmware image that you downloaded to your PC (the file will end in .img or .chk).
3. Once you have selected the file, click **Upload** to send the software to the router. The upload process will take several minutes. When the software upload process is complete, the router will restart.



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 Ready light stops blinking, wait a few seconds more before using the router.

4. After the router has restarted, select **Router Status** under the Management menu. 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* for other ways to upgrade the router. The *Reference Manual* is available through the Documentation link on the router main menu (or through a link on the *Resource CD*).

If you selected the **No** radio box during installation, and want to check for new firmware later, follow the procedure below. It is advisable to 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, download 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 Password (**password** for the router Password), in lowercase letters. If you changed the Password from the default, then enter your new Password.
3. Select **Firmware Update** under Management on the main menu on your router interface. 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 pull-down menu, select your router model number. The Product Support page for your router will display.

6. Under Downloads, check the most recent Firmware Version offered against the Firmware Version shown on your Router Status screen.
7. If the version on the NETGEAR website is more recent, click on the 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 upgrade your router:”](#) to complete the upgrade process.

Manually Installing Your Router

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



Use the procedures in this topic if you are an advanced user, or a user of Macintosh and Linux systems.

- Internet service connection through an Internet Service Provider (ISP).
- The configuration information your ISP gave you. Depending on how your Internet account was set up, you may 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 cable modem service, make sure that you are using the same computer on which you first set up your Internet account.

If you have not already done so:

- Check the package contents of your router to ensure that it is complete (see [“Unpacking Your New Router” on page 1](#)”).
- Select an optimum location for your wireless router after reviewing the guidelines presented in [“Positioning Your Wireless Router” on page 4.](#)”

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 41](#).



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

To connect the wireless router, the computer, and the modem:

1. Turn off your computer.
2. Turn off and unplug the cable or DSL broadband modem.
3. Locate the Ethernet cable (A) that connects your computer to the modem.
4. Disconnect the cable at the modem end only (B). You will connect it to the router later.

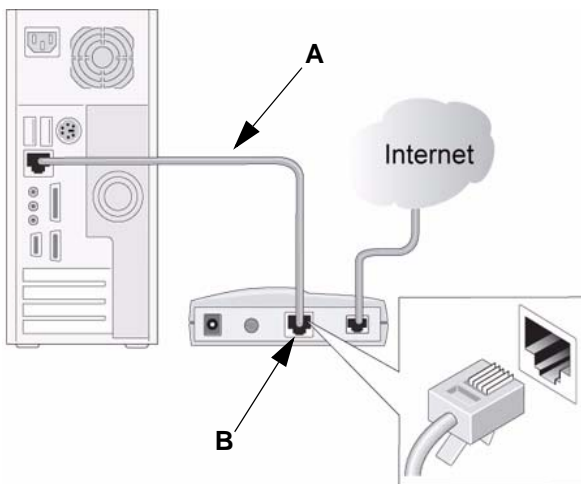


Figure 7

5. Locate the Ethernet cable that came with your NETGEAR product. Securely insert one end of the Ethernet cable into your modem and the other end into the Internet port of the wireless router (C). (The Ethernet cable and the Internet port label are color coded.)

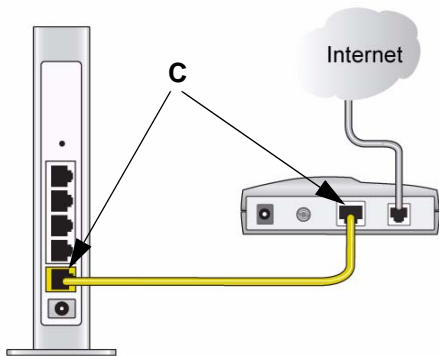


Figure 8

6. Locate the Ethernet cable (D) that is attached to your computer (see Step 3). Securely insert that cable into a LAN port on the router, such as LAN port 1 (E), as shown in Figure 9.

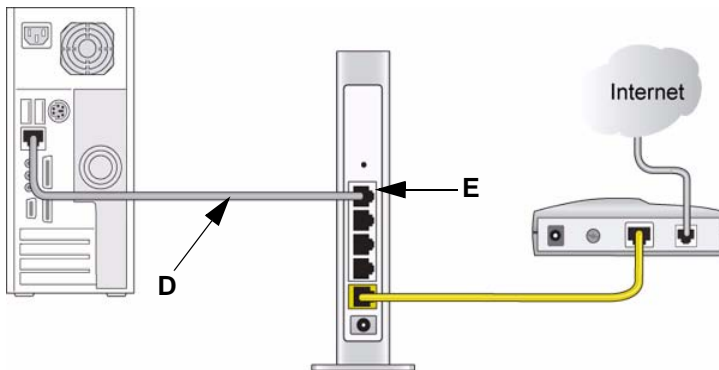


Figure 9

7. Connect any additional wired PCs to your router by inserting an Ethernet cable from a PC into one of the three remaining LAN ports.

When your network cables are connected as shown in Figure 9, you are ready to start your network. Start your network in the correct sequence, as described below.



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

To start your network:

1. Plug in and turn on the cable or DSL modem. Wait 2 minutes.
2. Plug the power cord into your wireless router and into a power outlet. Wait 1 minute.
3. Turn on your computer. It will 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 may need to go to the Internet Explorer Tools menu, Internet Options, Connections tab and 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 10](#)).







- **Power.** The power light  should turn solid green. If it does not, see [“Checking Basic Router Functions” on page 30](#).
 - **Wireless.** The wireless light  should be lit after turning on the router.
 - **Internet.** The Internet port light  should be lit. If it is not, make sure the Ethernet cable is securely attached to the wireless router Internet port and the modem, and that the modem is powered on.
 - **LAN.** A LAN light  should be lit for each connected computer on your network. Green indicates that your computer is communicating at 1000 Mbps; amber indicates communication at 10/100 Mbps. If a LAN light is not lit for each connected Ethernet cable, make sure that the Ethernet cable from the computer to the router is securely attached at both ends, and that the computer is turned on.
- WPS.** The WPS button/light will not be lit unless you are enabling WPS security.

Figure 10

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 User Name and Password” on page 38](#) for more information.

To access the router using its login name and password:

1. Type **http://www.routerlogin.net** in the address field of your browser, and then click **Enter**.



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

A login window similar to the one shown in [Figure 11](#) will display.



Figure 11

2. When prompted, enter **admin** for the router User Name and **password** for the router Password, both in lowercase letters. (For security reasons, the router has its own user name and password.)



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

The Main menu will display.

- From the menu options in the left navigation pane, click **Setup Wizard**. The **Setup Wizard** screen will display.

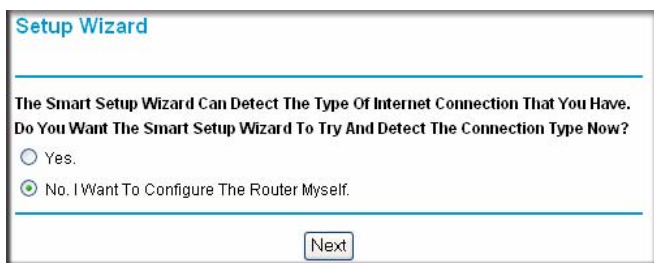


Figure 12

- Select one of the following options:
 - Select **Yes** to allow the Setup Wizard to detect your Internet connection. When prompted, click **Next**. The wizard will assist you with configuring your wireless router to access the Internet.



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 41](#).

- 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’s Manual* for this wireless router.
- Click **Apply** to save your settings and complete your connection.

You should now be connected to the Internet!

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 29](#).


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

Checking for New Firmware

After installing your router, you must open a browser window and log in to the router to complete your wireless setup. At that time, 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**.

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



Figure 13

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.



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.

3. The **Firmware Upgrade Assistant** screen will display.
4. 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 [“To manually check for new router firmware:”](#) on page 23.)

5. If new firmware is available, you will be directed to the new firmware version on the NETGEAR website. Click **Right-click and Save to Download** and save the file to a location on your hard disk.

Usually the firmware image is an .img or .chk file and does not need to be decompressed before you can use it to upgrade your router. If, however, the file is a .zip file, then the image is compressed and must be “unzipped” before you can use the file. On Windows machines, the WinZip utility can be used to unzip the file.

To upgrade your router:

1. If the **Router Upgrade** screen does not display automatically, select **Router Upgrade** under **Maintenance** on the main menu. The **Router Upgrade** screen will then display.
2. Click **Browse** and locate the unzipped firmware image that you downloaded to your PC (the file will end in “.img”).
3. Once you have selected the file, click **Upload** to send the software to the router. The upload process will take several minutes. When the software upload process is complete, the router will restart.



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 Ready light stops blinking, wait a few seconds more before using the router.

4. After the router has restarted, select **Router Status** under the **Maintenance** menu. 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 box during installation, and want to check for new firmware later, follow the procedure below. It is advisable to 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 the **Maintenance** menu on your router interface. 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** pull-down menu, select your router model number. The Product Support page for your router will display.
6. Under **Downloads**, check the most recent Firmware Version offered against the Firmware Version shown on your Router Status screen.
7. If a the version on the NETGEAR website is more recent, click on the 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 upgrade your router:](#)” to complete the upgrade process.

Configuring Your Wireless Settings and Security Options



For Advanced Users Only! If you are using the Microsoft Vista OS, you can elect to use Windows Connect Now to implement WPS (Wi-Fi Protected Setup) and configure the SSID and WPA security password for your router. You will be prompted for your security PIN number which is on the label at the back of your router (see “[Router Label](#)” on page 4). To configure other router settings, access the router interface following the steps below; or see the link to your *Reference Manual* on the *Resource CD*.

This feature is available only if the router is in its default state or if the “allow a registrar to configure this router” radio box has been checked.

To make it easy for you to select the security that best fits your network, NETGEAR provides a several methods for configuring security:

- The Smart Wizard offers to guide you in setting up security at initial setup (see [“Installing Your Wireless Router” on page 5](#))
- If you have any devices (a notebook, adapter, or other device) that support Wi-Fi Protected Setup (WPS), you can enable WPS security (see [“Back Panel” on page 3](#) and [“Using Wi-Fi Protected Setup \(WPS\)” on page 24](#)).
- The Wireless Settings screen lets you set your Wireless Network connections and select the appropriate and optimum Security Options for your network and router (see [“Configuring Security Through the Wireless Settings” on page 25](#)).

Unlike wired network data, your wireless data transmissions can extend beyond your walls and anyone with a compatible adapter can receive them. For this reason, use the security features of your wireless equipment. The wireless router provides highly effective security options which are covered in detail in the *User Manual* that is available from a link on the *Resource CD* or by clicking the **Documentation** link on the main menu of your router.



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

Using Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS). The router’s push-button (see [“Back Panel” on page 3](#)) enables WPS security with other WPS-enabled devices. Pushing on the button 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. If you do not have any other WPS-enabled devices, there is no need to open the 2 minute period when security will be disabled, or to configure your router security for WPS.

To connect to another device using WPS:

1. Open the networking utility of the device that supports WiFi Protected Setup (WPS) and follow the utility’s instructions for when to proceed to step 2.

2. Push the wireless router's push-button for 5 seconds, then release. The push-button light should begin to blink..



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. For more information about security, see the *Reference Manual* that is available from a link on the *Resource CD* as well as a link in the main menu of your router.

3. While the push-button light is blinking, you have 2 minutes to enable WPS on the device you are trying to connect with the router. The blinking ceases when one of these two conditions occurs:
 - WPS is enabled between the router and the other device you are connecting to.
 - The 2-minute window period expires for establishing a WPS connection. Whether or not a connection is established, your router security and SSID (service set identification key) are now configured for WPS.

The push-button remains lit to show you have enabled WPS security.

4. If after enabling WPS you need to connect a device that does not include WPS functionality, you will need to first log in to the router and obtain the security key. For more information, refer to “[Configuring Security Through the Wireless Settings](#)” and the online *Reference Manual*, available as a link on the *Resource CD*.
5. If you want to disable WPS, you have to reset your router to factory default settings. For information about resetting to the default settings, see “[Restoring the Default User Name and Password](#)” on page 38.

Configuring Security Through the Wireless Settings

To set up wireless connectivity and enable wireless security:

1. Log in to the router at <http://www.routerlogin.net> with its default user name of **admin** and default password of **password**. (If you have changed the User Name and Password from the defaults, use what you have set up).

2. Select **Wireless Settings** under **Setup** on the main menu. The **Wireless Settings** screen will display showing the default wireless network settings for this router. (Use the help screens or the online *User Manual* if you require assistance to change your wireless settings.)



The Service Set Identifier (SSID) of any wireless adapter, which is the device's wireless network name, must match the SSID you configured in the router. If they do not match, you will not get a wireless connection.

3. Select a **Security Option**. NETGEAR strongly recommends that you implement security on your wireless network. Follow the instructions in the *User Manual* or the router help screens if you need help setting up the security feature appropriate to your needs.
4. Click **Apply** to save your settings.



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 your computer's wireless settings to match the router's new settings.

Setting Up Your Wireless Computers

Once you have set up your router, you are ready to configure your wireless computers with the same settings as those you configured on the router. For your wireless computers to work with the router, the settings of each wireless computer must match the wireless router's settings exactly.

To set up your computers for wireless connectivity:

1. Program the wireless adapter of each computer to have the same SSID (Wireless Network Name) as the router.
2. Check that the wireless adapter on each wireless computer can support the Mode and Security options 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](#)).



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

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. Check the Wireless Connections Properties and ensure that TCP/IP Properties are set to “Obtain an IP address automatically.”

Troubleshooting

If you have difficulties accessing the Internet, use the Basic Setup Checklist to make sure that you have connected and set up your router correctly. If your basic setup is correct, then look for your problem in one of the subsequent sections.

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 you always start your network in this sequence:**
 1. Turn off and unplug the modem from the power outlet. Next, 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 the Ethernet cables are securely plugged in.**
 - 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 [“Connecting Your Wireless Router” on page 16](#)).
 - 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 will be lit. The label on the back of the wireless router identifies the number of each LAN port (see [“Router Label” on page 4](#)).
- **Make sure the network settings of the computer are correct.**
 - LAN connected computers *must* be configured to obtain an IP address automatically using DHCP. For more information, see the links in [“Related Documents” on page 41](#).
 - 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.” Click **Apply** to save your settings. 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 turning the router on, reset the router according to the instructions in [“Restoring the Default User Name and Password”](#) on page 38.

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 push-button stops blinking and changes to green (otherwise the push-button light should be off).

If the correct behavior does not occur, check for a remedy from the following list:

- **Power Light Not On.** If the Power and other lights are off (see [“Connecting Your Wireless Router”](#) on page 16), 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:

- a. Turn the power off and back on to see if the router recovers.

- b. 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 User Name and Password" on page 38](#).

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

- **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:

- a. The Internet is not accessible. Confirm that you have the correct internet setting.
 - b. 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 User Name and Password" on page 38](#).
 - c. Turn the power off and back on to see if the router recovers.
- **Internet or LAN Port Lights Not On.** If either the LAN or Internet lights do not light when the Ethernet connection is made, check the following:
 - a. Make sure that the Ethernet cable connections are secure at the router and at the computer.
 - b. Make sure that power is turned on to the connected computer.
 - c. Be sure you are using Ethernet cables like the cable that was supplied with the wireless router.

See ["Connecting Your Wireless Router" on page 16](#) for instructions.

- **WPS Push-Button Blinks Amber.** If after setting WPS security the push-button blinks amber, check the following:
 - a. Make sure that you are using the push-button and not the router's built-in registrar (see ["Using Wi-Fi Protected Setup \(WPS\)" on page 24](#)).
 - b. Check that PIN verification has succeeded for the WPS-enabled device you are connecting to the router.
 - c. Make sure you have not pushed the push-button after disabling the WPS function (you logged into the router and disabled this previously).
 - d. Check that the router is not in the temporary AP setup locked state (if you are using the wireless repeater function).

For more information on WPS security 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 [“Checking Basic Router Functions” on page 30](#).
- Make sure you are using the correct login information. The factory default login name is **admin** and the password is **password**. Make sure that the Caps Lock is off when entering this information.
- Make sure your computer’s IP address is on the same subnet as the router. If you are using the recommended addressing scheme, 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 or see [“Preparing a Computer for Network Access” in “Related Documents” on page 41](#) for help with configuring your computer.



If your computer cannot reach a DHCP server, some operating systems will assign an IP address in the range 169.254.x.x. If your IP address is in this range, verify that you have a good connection from the computer to the router, then restart (reboot) your computer.

- If your router’s IP address has been changed and you don’t know the current IP address, reset the router’s configuration to the factory defaults. This procedure will reset the router’s IP address to 192.168.1.1 (see [“Restoring the Default User Name and Password” on page 38](#)).
- Make sure your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click Refresh to be sure the Java applet is loaded. Try closing the browser and reopening it again.

Checking the Internet Service Connection

If your router is unable to access the Internet, check the Internet connection, and then check the wireless router.

- **Internet Connection.** The cable or DSL 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.
- **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.

- **Wireless Router Internet Light Off.** If the Internet light is off, verify that the Ethernet cable is securely connected between the cable or DSL 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, 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 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 may be one of the following:

- Your service provider may require a login. Ask your service provider whether they require a PPP over Ethernet (PPPoE) login.
- You may have incorrectly set the Service Name, User Name or Password. See [“Troubleshooting PPPoE” on page 34](#).
- Your service provider might check for your computer's host name. Assign the computer Host Name of your ISP account to the wireless router on the **Basic Settings** screen.
- Your service provider might only allow one Ethernet MAC address to connect to the Internet, and check for your computer's MAC address. If this is the case:
 - Inform your service provider that you have bought a new network device, and ask them to use the wireless router's MAC address, or
 - Configure your router to spoof your computer's MAC address. On the **Basic Settings** screen in the Router MAC Address section, select “Use this Computer's MAC Address” and click **Apply**. Then restart your network in the correct sequence (see [“Basic Setup Checklist” on page 29](#)).

Troubleshooting PPPoE

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

To troubleshoot a PPPoE connection:

1. Log in to the wireless router.
2. Select **Router Status** under **Maintenance** on the main menu.
3. Click **Connection Status**. If all of the steps indicate “OK,” then your PPPoE connection is up and working.

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 may be using an incorrect Service Name, User Name, or Password. There also may 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 may 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 will provide the addresses of one or two DNS servers for your use. If you entered a DNS address during the wireless router’s configuration, restart your computer. Alternatively, you can configure your computer manually with a DNS address, as explained in the documentation for your computer.
- **Your computer may not have the wireless router configured as its default gateway.** Reboot the computer and verify that the wireless router address (192.168.1.1) is listed by your computer as the default gateway address.

Using the Ping Utility to Troubleshoot

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

Testing the Path from Your Computer 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 from a Windows PC:

1. From the Windows task bar, 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
```

3. Click **OK**. You should see a message like this one:

```
Pinging www.routerlogin.net with 32 bytes of data
```

If the path is working, you see this message:

```
Reply from www.routerlogin.net: 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 working correctly, you could have one of the following problems:

- Wrong physical connections
 - Make sure the LAN port light is on. If the light is off, follow the instructions in [“Basic Setup Checklist”](#) on page 29.
 - 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 addresses for your router and your computer are correct and that both addresses are on the same subnet (for example, 192.168.1.x/255.255.255.0).

Testing the Path from a Computer 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.

To test the path using ping from a Windows PC:

1. From the Windows task bar, click **Start** and select **Run**.

2. In the field provided, type `cmd`. A command screen will display.
3. At the `>` prompt, type the following:

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

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

4. Press **Enter**.

If the path is working correctly, replies as in the previous section will display. 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 will not be 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 menu.

Default Configuration

Default Configuration Settings

You can use the Restore Factory Settings button located on the back of your device to reset all configuration settings to their factory defaults. This is called a hard reset.

- To perform a hard reset, push and hold the Restore button for approximately 5 seconds (until the POWER status light blinks rapidly). Your device will return to the factory configuration settings shown in [Table 1](#) below.
- Pressing the Restore button for a shorter period of time will simply cause your device to reboot.

Table 1. Home Router Default Configuration Settings

Feature		Default Setting
Smart Wizard		Disabled
Router Login		
	Router Login URL	http://www.routerlogin.net; http://www.routerlogin.com; or http://192.168.1.1
	Login Name (case sensitive)	admin
	Login Password (case sensitive)	password
Internet Connection		
	WAN MAC Address	Default hardware address (on label)
	MTU Size	1500
Local Network		
	Router Lan IP address (the Gateway IP address)	192.168.1.1
	IP Subnet Mask	255.255.255.0
	DHCP Server	Enabled
	Time Zone	GMT

Table 1. Home Router Default Configuration Settings (continued)

Feature		Default Setting
	Time Zone Adjusted for Daylight Saving Time	Disabled
Firewall		
	Inbound (communications coming in from the Internet)	Disabled (bars all unsolicited requests except for traffic on port 80, the http port)
	Outbound (communications going out to the Internet)	Enabled (all)
Wireless		
	Wireless Communication	Enabled
	SSID Name	NETGEAR
	Security	Disabled
	Broadcast SSID	Enabled
	Transmission Speed	Auto ^a
	Country/Region	United States (North America only; otherwise varies by country and region)
	RF Channel	6 until region selected
	Operating Mode	130 Mbps
	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.

Restoring the Default User Name and Password

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 erases your current configuration and restores 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 default reset button, located on the rear panel of the router, for about 20 seconds (see [“Back Panel” on page 3](#)).
2. Release the reset button and wait for the router to reboot.

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 section 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
Internet Networking and TCP/IP Addressing	http://documentation.netgear.com/reference/enu/tcpip/index.htm
Preparing a Computer for Network Access	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://kbserver.netgear.com/>.

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.

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 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.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

