

Chapter 3

Basic Setup

This chapter describes how to install your NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U and set up basic wireless connectivity on your Wireless Local Area Network (WLAN). Advanced wireless network configuration is covered in [Chapter 4, “Netgear Smart Wireless Wizard”](#) in this manual.



Note: Indoors, computers can easily connect to 802.11 wireless networks at distances of several hundred feet. Because walls do not always block wireless signals, others outside your immediate area could access your network. It is important to take appropriate steps to secure your network from unauthorized access. The NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U provides highly effective security features which are covered in [“Wireless Security Configuration” on page 5-1](#) in this manual. Deploy the security features appropriate to your needs.

What You Need Before You Begin

You need to verify your computer meets the minimum system requirements and identify the wireless network configuration settings of the WLAN where you will connect before you can configure your wireless PC card and connect.

Verifying System Requirements

Before installing the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U, please make sure that these minimum requirements have been met:

- You must have a notebook PC with a Pentium® 300 MHz or higher compatible processor with an available CardBus slot.

Note: The WG511U requires a CardBus slot. If you are not sure about what type of slot your computer has, consult the documentation or manufacturer’s web site for your computer.

- A CD-ROM drive.
- 5 Mbytes of free hard disk space.

- Windows XP Home, Windows XP Professional, 2000, Me, 98SE or 98
- Some versions of Windows may ask for the original Windows operating system installation files to complete the installation of the WG511U driver software.

Observing Location and Range Guidelines

Computers can connect over wireless networks indoors at a range which vary significantly based on the physical location of the computer with the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U. For best results, avoid potential sources of interference, such as:

- Large metal surfaces
- Microwaves
- 2.4 GHz Cordless phones

In general, wireless devices can communicate through walls. However, if the walls are constructed with concrete, or have metal, or metal mesh, the effective range will decrease if such materials are between the devices.

Two Basic Operating Modes

The WG511U Wireless PC Card can operate in the following two basic modes:

- **Infrastructure Mode:** An 802.11 networking framework in which devices and computers communicate with each other by first going through an access point (AP). For example, this mode is used when computers in a house connect to an Access Point that is attached to a router which lets multiple computers share a single Cable or DSL broadband Internet connection.
- **Ad-Hoc Mode:** An 802.11 networking framework in which devices or computers communicate directly with each other, without the use of an AP. For example, Ad-Hoc Mode is used when two Windows computers are configured with file and print sharing enabled and you want to exchange files directly between them.

Both of these configuration options are available with the WG511U Wireless PC Card. Infrastructure configuration procedures for basic network connectivity are covered below. Advanced infrastructure configuration procedures and ad-hoc configuration are covered in [Chapter 4, “Netgear Smart Wireless Wizard”](#) of this manual.

WG511U Default Wireless Configuration Settings

If this is a new wireless network installation, use the factory default settings to set up the network and verify wireless connectivity. If this is an addition to an existing wireless network, you will need to identify the wireless configuration and security parameters already defined.

Your WG511U factory default basic settings are:

- Wireless Network Name (SSID): **NETGEAR_11g**
Note: In order for the WG511U Wireless PC Card to communicate with a wireless access point or wireless adapter, all devices must be configured with the same wireless network name (SSID).
- Network Mode (Infrastructure or Ad-hoc): **Infrastructure**
- Data security WPA-PSK encryption: **Enabled**
- Default WPA-PSK passphrase: **NETGEAR-ULTRA-G**

The section below provides instructions for setting up the WG511U for basic wireless connectivity to an access point. The procedures below provide step-by-step installation instructions for Windows PCs. Use the procedure that corresponds to the version of Windows you are using.

Basic Installation Instructions

Use the procedure below that corresponds to the version of Windows you are using.

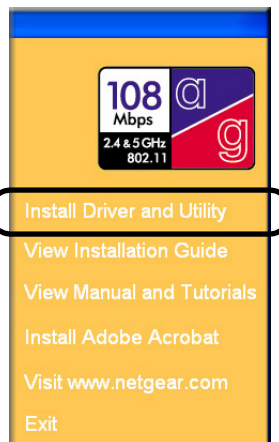
For Windows XP Users Installing a WG511U

1

Install the WG511U driver and configuration utility software.

- a. Power on your notebook, let the operating system boot up completely, and log in as needed.
- b. Insert the Resource CD for the WG511U into your CD-ROM drive. The CD main page shown at the right will load.
- c. Click **Install Driver and Utility**.
- d. Follow the InstallShield Wizard steps, and click **Finish** when done to restart your computer.

Note: If a Windows XP Certification warning appears, click **Continue Anyway** to proceed.



WG511U Resource CD



InstallShield Wizard

2

Insert the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U.

- a. Locate an available CardBus slot on the side of your notebook. Hold the PC Card with the NETGEAR logo facing up and insert it into the CardBus slot.

After a short delay, the Found New Hardware Wizard displays.

Follow the prompts to complete the wizard.

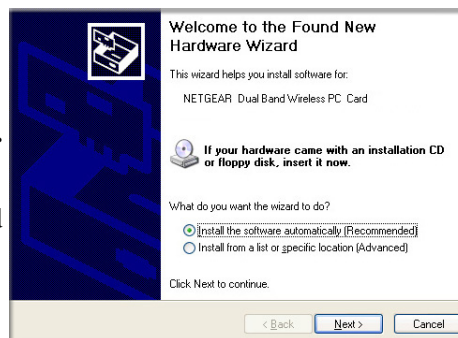
- b. Next you will be prompted to enable the NETGEAR Smart Wireless Settings Utility configuration utility.

Click **Yes** to accept this option.

If you choose No, you must read the Windows XP documentation for an explanation of how to use the Windows XP wireless network configuration utility

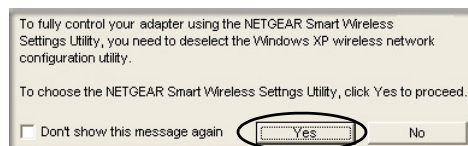
You will also be prompted to choose the country you are located in. Select your location from the list.

- c. Click **Finish** to complete the installation. You will see the WG511U system tray icon on the lower right portion of the Windows task bar.



Found New Hardware Wizard

Note: Click **Continue Anyway** if you are prompted with a Windows XP Logo testing message.




Enable NETGEAR Utility Configuration



WG511U System Tray Icon

3

Configure your WG511U.

- a. Click the  icon on the Windows desktop or in the system tray to open the WG511U Smart Wireless Settings Utility.

The utility opens to the Settings tab page.

- b. For the Network Name (SSID), use the default of **NETGEAR_11g** or type an SSID for your network.

Tip: As an alternative to typing in the SSID, you can use the drop-down list or the Networks tab to view the available wireless networks, and choose the one you want.

- c. Click **Apply** to activate the connection.

The status monitor icons at the bottom of the utility will turn yellow indicating the connection is established, and will also report the speed, signal quality, and if the security requirements are met.

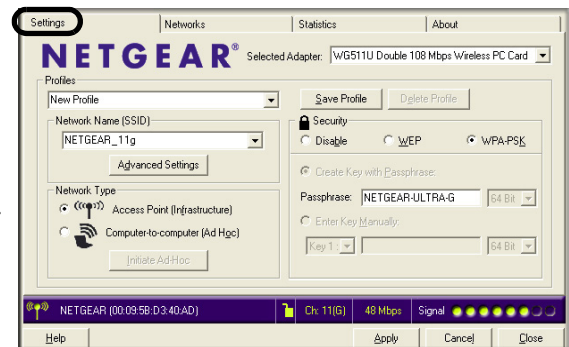
You can also enter a profile name and click Save Profile to store the current settings.

Tip: Create profiles called *work* and *home*. Then, activate whichever one you need for your current location.



Click here to open the configuration utility.

WG511U system tray icon



Smart Wireless Utility Settings page

Tip: Click Help to view the context-sensitive help information.

Note: The NETGEAR default settings are **Infrastructure mode**, with **NETGEAR_11g** for the wireless network name SSID, and WPA-PSK enabled with the passphrase of **NETGEAR-ULTRA-G**. If your WLAN settings are different from these you will not connect. Set up your WG511U accordingly.

Note: This procedure assumes you are connecting to a wireless network which is using WPA security. If your network does not include security settings, configure the WG511U accordingly. For help with these steps, click the Help button in the WG511U Configuration Utility to view context-sensitive help information, or see [Chapter 5, "Wireless Security Configuration"](#).

4

Verify wireless connectivity to your network.

- a. Verify that your Connection and Status Monitor information matches your wireless network.
- b. Check the two LEDs on the WG511U:

Table 3-1: LED Descriptions

LED 1 (below the word NETGEAR on the left)	LED 2 (below the word NETGEAR on the right)	Meaning
Slow blink	OFF	Power save mode (default from power up or reset)
Alternate blink	Alternate blink	Looking for network association Power LED goes ON; Network LED is OFF; then Power LED goes OFF and Network LED goes ON
Slow blink	Slow blink	Associated or joined with network; no activity
Fast blink	Fast blink	Associated or joined with network; blink rate increases with activity on the network over the air or locally on the network

- c. Verify connectivity to the Internet or network resources.

Note: If you are unable to connect, see troubleshooting tips in the Basic Installation section of the Reference Manual on the *NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD*.

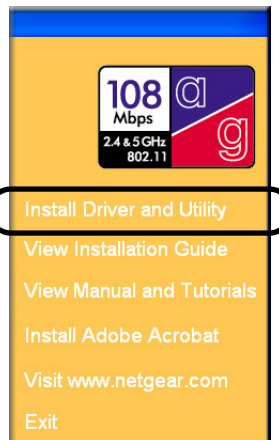
For Windows 2000 & 98/Me Users Installing a WG511U

1

Install the WG511U driver and configuration utility software.

Note: Windows 2000 may require you to be logged on with administrator rights.

- a. Power on your notebook, let the operating system boot up completely, and log in as needed.
- b. Insert the Resource CD for the WG511U into your CD-ROM drive. The CD main page shown at the right will load.
- c. Click **Install Driver and Utility**.
- d. Follow the InstallShield Wizard steps, click **Finish** when done, and if prompted, restart your computer.



WG511U Resource CD



InstallShield Wizard

2

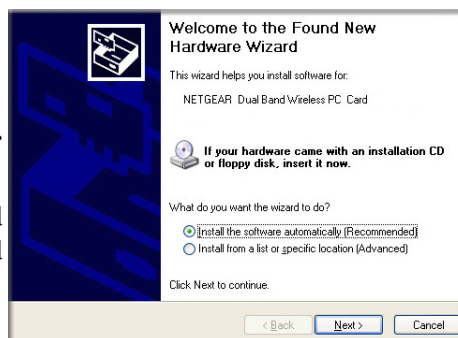
Insert the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U.

- a. Locate an available CardBus slot on the side of your notebook. Hold the PC Card with the NETGEAR logo facing up and insert it into the CardBus slot.

After a short delay, the Found New Hardware Wizard displays.

- b. Follow the Found New Hardware Wizard steps, click **Finish** when done, and if prompted, restart your computer.
- c. Next, you will be prompted to choose the country where you are located. Select your location from the list.

You should see the WG511U system tray icon on the right in the lower right portion of the Windows task bar and on the Windows desktop.



Found New Hardware Wizard


Note: If Windows warns about a Digital Signature Not Found, click **Yes** to continue.



WG511U System Tray Icon

3

Configure your WG511U and save the Profile.

- a. Click the  icon on the Windows desktop or in the system tray to open the WG511U Smart Wireless Settings Utility.

The utility opens to the Settings tab page.

- b. For the Network Name (SSID), use the default of **NETGEAR_11g** or type an SSID for your network.

Tip: As an alternative to typing in the SSID, you can use the drop-down list or the Networks tab to view the available wireless networks, and choose the one you want.

- c. Click **Apply** to activate the connection.

The status monitor icons at the bottom of the utility will turn yellow indicating the connection is established, and will also report the speed, signal quality, and if the security requirements are met.

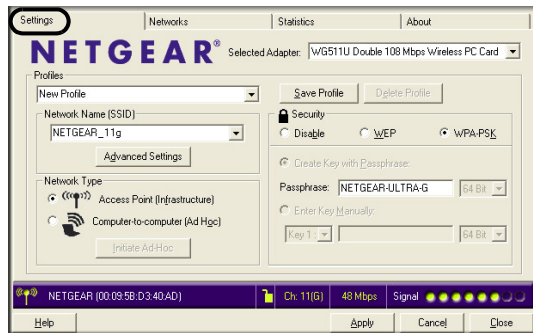
- d. You can also enter a profile name and click Save Profile to store the current settings.

Tip: If you use your desktop PC to connect to a wireless network at work and at home, create profiles called *work* and *home*. Then, activate whichever one you need for wherever you are located.



Click here to open the configuration utility.

WG511U system tray icon



WG511U Configuration Utility

Note: The NETGEAR default settings are **Infrastructure mode**, with **NETGEAR_11g** for the wireless network name SSID, and WPA-PSK enabled with the passphrase of **NETGEAR-ULTRA-G**. If your WLAN settings are different from these you will not connect. Set up your WG511U accordingly.

Note: This procedure assumes you are connecting to a wireless network which is using WPA security. If your network does not include security settings, configure the WG511U accordingly. For help with these steps, click the Help button in the WG511U Configuration Utility to view context-sensitive help information, or see [Chapter 5, "Wireless Security Configuration"](#).

4

Verify wireless connectivity to your network.

- a. Verify that your Connection and Status Monitor information matches your wireless network.
- b. Check the two LEDs on the WG511U:

Table 3-2: LED Descriptions

LED 1 (below the word NETGEAR on the left)	LED 2 (below the word NETGEAR on the right)	Meaning
Slow blink	OFF	Power save mode (default from power up or reset)
Alternate blink	Alternate blink	Looking for network association Power LED goes ON; Network LED is OFF; then Power LED goes OFF and Network LED goes ON
Slow blink	Slow blink	Associated or joined with network; no activity
Fast blink	Fast blink	Associated or joined with network; blink rate increases with activity on the network over the air or locally on the network

- c. Verify connectivity to the Internet or network resources.

Note: If you are unable to connect, see troubleshooting tips in the Basic Installation section of the Reference Manual on the *NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD*.

WG511U Wireless Connection Indicators

The NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U provides the following three indicators which give you feedback on the status of your wireless connection:

- The two LEDs on the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U indicate the condition of wireless link.
- The color of the SysTray icon is on the System Tray portion of the taskbar in the Microsoft Windows desktop indicates the status of the connection.

Interpreting the LED on the WG511U




These LEDs are described in this table.

Table 3-3: LED Descriptions

LED 1 (below the word NETGEAR on the left)	LED 2 (below the word NETGEAR on the right)	Meaning
Slow blink	OFF	Power save mode (default from power up or reset)
Alternate blink	Alternate blink	Looking for network association Power LED goes ON; Network LED is OFF; then Power LED goes OFF and Network LED goes ON
Slow blink	Slow blink	Associated or joined with network; no activity
Fast blink	Fast blink	Associated or joined with network; blink rate increases with activity on the network over the air or locally on the network
OFF	OFF	No power applied to the card

Interpreting System Tray Icon Colors

The System Tray (SysTray) resides on one end of the taskbar in the Microsoft Windows desktop.

Color	Condition	Description
Red 	The wireless PC Card has no connection to any other wireless node.	The wireless PC Card is not able to link to any other wireless node or the link is lost. Check your configuration or try moving to a location where the wireless signal quality is better.
Yellow 	The wireless PC Card has a connection with another wireless node.	The wireless link is weak. You may need to move to a better spot, such as closer to the wireless access point. Also, look for possible interference such as a 2.4 GHz cordless phone or large metal surface.
Green 	The wireless PC Card has a connection with another wireless node.	The wireless PC Card has established good communication with an access point and the signal quality is strong.

Troubleshooting

Use the information below to solve common problems you may encounter. Also, please refer to the knowledge base on the NETGEAR web site at www.netgear.com/support/main.asp.

Basic Tips

If you have problems connected to your wireless network, try the tips below.

Symptom	Cause	Solution
The PC Card LEDs are not lit.	The WG511U is not inserted into the slot properly or the WG511U software is not loaded.	Remove and reinsert the WG511U. Check the Windows device manager to see if the PC Card is recognized and enabled. Reload the WG511U software, if necessary. Try to install the WG511U in a different slot on your system if one is available.
The LEDs blink alternately and cannot connect to an access point.	The WG511U is attempting to connect to an access point, but cannot connect.	The access point may not be powered on. Or, the access point and the PC card are not configured with the same wireless parameters. Check the SSID and WEP settings.
I can connect to an access point, but I cannot connect to other computers on the network or the Internet.	This could be a physical layer problem or a network configuration problem.	Check to make sure that the access point is physically connected to the Ethernet network. Make sure that the IP addresses and the Windows networking parameters are all configured correctly. Restart the cable or DSL modem, router, access point, and notebook PC.

Troubleshooting Frequently Asked Questions

1. Question: The product literature says the WG511U can operate at 108 Mbps. Why do I see no more than 54 Mbps speed on my WG511U Smart Configuration Utility status line?

Answer: You are probably connecting to standard 802.11g network. If you use a wireless device with the 108 Mbps logo, such as the NETGEAR WGT624 108 Mbps Wireless Firewall Router, you will see network speeds up to 108 Mbps.

Note: 108 Mbps speed is only available in wireless networks that support this proprietary mode.

2. Question: Why does the utility kept asking me to Save my settings when I'm trying to close the utility?

Answer: This is because you've made changes to the settings and the utility is offering you the chance to save the changes. If you want to avoid these Profile setting prompts, simply hit Apply before you Close the utility program.

3. Question: Why doesn't Ad Hoc mode work correctly after I enter a SSID and click Apply?

Answer: You need to click the Initiate Ad Hoc button before you click Apply.

Here is how you start an Ad Hoc network:

- a. Fill in the Network Name (SSID).
- b. Select the Computer-to-Computer (Ad-Hoc) network Type.
- c. Click initiate Ad Hoc.
- d. Accept default settings or make proper changes and click OK
- e. Click on Apply

Note: Be sure all computers in your Ad Hoc network are configured with static IP address in the same subnet.

4. Question: How do I remove the WG511U software and utility?

Answer: To remove the WG511U software, do the following: Run the "Uninstall WG511U Utility" shortcut in the "Start>Program> NETGEAR WG511U Adapter" menu.

5. Question: How do I know if my WG511U card has received a valid IP address from my Wireless Router/AP?

Answer: One easy way is to open up the WG511U utility program and check the IP Address in the About tab page.

6. Question for XP Professional and XP Home user only: How do I use XP's own Wireless configuration utility that came with the Windows XP?

Answer: The NETGEAR WG511U software is designed in such way that user will be asked to choose one of the utility programs during initial software installation. Be sure the card is in the notebook and follow these instructions to change your selection. Go to Control Panel> Network Connections> Wireless Network Connection > Properties> Wireless Networks tab> for the wireless card and check or uncheck "Use Windows to configure my wireless network settings".

7. Question: I don't understand the LEDs on the WG511U? Which is Power and which is network activity?

Answer: The WG511U LED's behavior is as follows: both blinking alternately means attempting to connect, both blinking together indicates a good connection (fast blinking means data transmission); off means the card is not plugged in or no power applied to the card.

8. Question: Is this WG511U IEEE 802.11g standards compliant?

Answer: Yes, the WG511 complies with the IEEE 802.11g/a/b standards.

9. Question: It is nice to have a browser-based type of Manual on the Resource CD, but how do I get a PDF copy of it, like the Installation Guide?

Answer: In the Manual html page, there is a PDF button image at the top right hand corner of the web page. Click on the PDF button brings up the PDF file of the entire manual. You can also Print, E-mail, Bookmark pages using the appropriate icons next to the PDF button.