

Chapter 2

Introduction

This chapter introduces the features, package contents, and a road map of typical applications for the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U.

The WG511U gives you ultimate mobility in your office or while you are traveling. It frees you from traditional Ethernet wiring and helps you create a wireless network for sharing your broadband Internet access in and around your home. It is designed for notebook computers running Microsoft® Windows®. It is 32-bit CardBus compatible and works in any available CardBus slot.

Its auto-sensing capability allows high packet transfer at up to 108 Mbps for maximum throughput or dynamic range shifting to lower speeds due to distance or operating limitations in an environment with a lot of electromagnetic interference.

The WG511U provides reliable, standards-based 802.11a/b/g wireless connectivity that is protected with the strongest industry-standard WPA and WEP security. In addition, it offers the faster 54 Mbps speeds of the 802.11a and g standards and can aggregate the 802.11a and 802.11g communications to deliver double the 108 Mbps of either alone. It works with Windows 98, Me, 2000, and XP operating systems.

Key Features and Related NETGEAR Products

The WG511U Wireless PC Card provides the following features:

- 802.11a and 802.11b/g standards-based wireless networking.
- Supports roaming between access points when configured in Infrastructure mode.
- Double 108 Mbps aggregation for ultra high speed data transfer. Wireless nodes negotiate to operate in the optimal data transfer rate. In a noisy environment or when the distance between the wireless nodes is far, the wireless nodes automatically fall back to operate at lower transfer rates.
- High level of data encryption using the strong WPA-PSK standard or the older 128-bit Shared Key WEP data encryption method. A lower level of data encryption or no data encryption is available to simplify your network setup or to improve data transfer rate.

802.11a and 802.11b/g Wireless Networking

The WG511U Wireless PC Card provides 802.11a-, b-, and g-compliant wireless communications, providing continuous, high-speed up to 108 Mbps access to your wireless network. The WG511U provides:

- 802.11a Standards-based wireless networking at up to 54 Mbps.
- 802.11b Standards-based wireless networking at up to 11 Mbps.
- 802.11g Standards-based wireless networking at up to 54 Mbps.
- WPA-PSK pre-shared key authentication without the overhead of RADIUS servers but with all of the strong security of WPA.
- 64-bit and 128-bit WEP encryption security.
- WEP keys can be generated manually or by passphrase.

What's in the Box?

The product package should contain the following items:

- NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U
- Installation Guide for the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U
- *NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD*, including:
 - Driver and Configuration Utility Software
 - User's Manual for the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U
 - Animated Network Properties Configuration Tutorial
 - PC Networking Tutorial
- Warranty card
- Support information card

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.

A Road Map for 'How to Get There From Here'

The introduction and adoption of any new technology can be a difficult process. Wireless technology has removed one of the barriers to networking—running wires. It allows more people to try networking while at the same time exposes them to the inherent complexity of networking. General networking concepts, setup, and maintenance can be difficult to understand. In addition, wireless technology adds issues, such as range, interference, signal quality, and security to the picture.

To help overcome potential barriers to successfully using wireless networks, the table below identifies how to accomplish such things as connecting to a wireless network, assuring appropriate security measures are taken, browsing the Internet through your wireless connection, exchanging files with other computers and using printers in the combined wireless and wired network.

Table 2-1. A Road Map for How to Get There From Here

If I Want To?	What's Needed?	What Do I Do?	How Do I?
Connect to a wireless network	<ol style="list-style-type: none">1. A wireless network2. A notebook PC within the operating range of the wireless network. For guidelines about the range of wireless networks, see "Observing Location and Range Guidelines" on page 3-2.	<ol style="list-style-type: none">1. Identify the wireless network name (SSID) and, if used, the wireless security settings.2. Set up the NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U with the settings from step 1.	<p>To set up the WG511U, see Chapter 3, "Basic Setup" and follow the instructions provided.</p> <p>To learn about wireless networking technology, see Appendix , "Wireless Networking Overview" for a general introduction.</p>

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If I Want To?	What's Needed?	What Do I Do?	How Do I?
Protect my wireless connection from snooping, hacking, or information theft.	<ol style="list-style-type: none"> 1. A wireless network with authentication and encryption enabled. 2. Wireless networking equipment that supports encryption, such as the WG511U and all NETGEAR wireless networking products. 	<ol style="list-style-type: none"> 1. Assure that the wireless network has security features enabled. 2. Configure my WG511U with the security settings of the wireless network. 3. Use Windows security features. 	<p>To learn about wireless networking security, see "Wireless Networking Overview" on page B-1.</p> <p>To understand WEP security features, see "WEP Overview" on page B-7.</p> <p>To understand WPA security features, see "WPA Wireless Security" on page B-13.</p>
Note: Secure Internet sites such as banks and online merchants use encryption security built into browsers like Internet Explorer and Netscape. Any wireless networking security features you might implement are in addition to those already in place on secure Internet sites.			
Connect to the Internet over my wireless network.	<ol style="list-style-type: none"> 1. An active Internet connection like those from cable or DSL service providers. 2. A wireless network connected to an Internet service through a router as illustrated in "Connecting to an Access Point in Infrastructure Mode" on page 4-2. 3. TCP/IP Internet networking software installed and configured on my notebook PC according to the requirements of the Internet service provider. 4. A browser like Internet Explorer or Netscape Navigator. 	<ol style="list-style-type: none"> 1. Activate my wireless link and verify my network connection. 2. Open an Internet browser such as Internet Explorer or Netscape Navigator. 	<p>To configure your WG511U in Infrastructure Mode, see "Basic Installation Instructions" on page 3-4, and locate the section for your version of Windows.</p> <p>For assistance with configuring the TCP/IP Internet software on a PC, see "Preparing Your Computers for TCP/IP Networking" on page C-1 or refer to the PC Networking Tutorial on the <i>NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD</i> and the Help information provided in the Windows system you are using.</p>

Table 2-1. A Road Map for How to Get There From Here

If I Want To?	What's Needed?	What Do I Do?	How Do I?
Exchange files between a wirelessly connected notebook computer and other computers in a my combined wireless and wired network.	<ol style="list-style-type: none"> 1. The notebook computer I am using to connect to the wireless network needs to be configured with the Windows Client and File and Print Sharing. 2. The notebook computer I am using to connect to the wireless network needs to be configured with the same Windows Workgroup or Domain settings as the other Windows computers in the combined wireless and wired network. 3. Any Windows networking security access rights such as login user name/ password that have been assigned in the Windows network or for sharing particular files must be provided when Windows prompts for such information. 4. If so-called Windows 'peer' Workgroup networking is being used, the drive, file system directory, or file need to be enabled for sharing. 	<ol style="list-style-type: none"> 1. Use the Windows Network Neighborhood feature to browse for computers in the combined wireless and wired network. 2. Browse the hard drive of the target computer in the network in order to locate the directory or files you want to work with. 3. Use the Windows Explorer copy and paste functions to exchange files between the computers. 	<p>For assistance with Windows networking software, see Appendix , "Preparing Your Computers for TCP/IP Networking" for configuration scenarios or refer to the Help system included with your version of Windows.</p> <p>Windows Domain settings are usually managed by corporate computer support groups.</p> <p>Windows Workgroup settings are commonly managed by individuals who want to set up small networks in their homes, or small offices.</p> <p>For assistance with setting up Windows networking, refer to the PC Networking Tutorial on the <i>NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD</i> and the Help information provided in the Windows system you are using.</p>

Table 2-1. A Road Map for How to Get There From Here

If I Want To?	What's Needed?	What Do I Do?	How Do I?
Use printers in a combined wireless and wired network.	<ol style="list-style-type: none"> 1. The notebook computer I am using to connect to the wireless network needs to be configured with the Windows Client and File and Print Sharing. 2. The notebook computer I am using to connect to the wireless network needs to be configured with the same Windows Workgroup or Domain settings as the other Windows computers in the combined wireless and wired network. 3. Any Windows networking security access rights such as login user name/ password that have been assigned in the Windows network must be provided when Windows prompts for such information. 4. If so-called Windows 'peer' networking is being used, the printer needs to be enabled for sharing. 	<ol style="list-style-type: none"> 1. Use the Windows Printers and Fax features to locate available printers in the combined wireless and wired network. 2. Use the Windows Add a Printer wizard to add access to a network printer from the notebook PC you are using to wirelessly connect to the network. 3. From the File menu of an application such as Microsoft Word, use the Print Setup feature to direct your print output to the printer in the network. 	<p>Windows Domain settings are usually managed by corporate computer support groups.</p> <p>Windows Workgroup settings are commonly managed by individuals who want to set up small networks in their homes, or small offices.</p> <p>For assistance with setting up Windows networking, refer to the PC Networking Tutorial on the <i>NETGEAR Double 108 Mbps Wireless PC Card 32-bit CardBus WG511U Resource CD</i> and the Help information provided in the Windows system you are using.</p> <p>For assistance with setting up printers in Windows, refer to the Help and Support information that comes with the version of the Windows operating systems you are using.</p>