D-Link *Air*Plus X*TREME G*™
WUA-2340

802.11g (2.4GHz)
Wireless G USB 2.0 Adapter

Manual

D-Link®
Building Networks for People

Package Contents

Contents of Package:

- **D-Link *Air*Plus Xtreme G™ WUA-2340**
  2.4 GHz Wireless G USB 2.0 Adapter
- Manual on CD-ROM
- Quick Installation Guide
- Cradle

If any of the above items are missing, please contact your reseller.

System Requirements:

- A computer or laptop with an available USB 2.0 port
- Windows XP/2000
- At least 64MB of memory and a 500MHz processor
- Properly installed and working USB Controller

Introduction

The D-Link *Air*Plus *X*treme *G*™WUA-2340 Wireless G USB Adapter is an 802.11b/802.11g high-performance,convenient Plug & Play USB 2.0 solution that brings wireless networking to your laptop or desktop PC.

With a maximum wireless signal rate of up to 54Mbps (108Mbps* in Turbo mode) you can connect to a wireless network at home, at the office or at any wireless hotspot. Now you can stay connected wherever you are and wherever you go.

The WUA-2340 is Wi-Fi compliant, meaning that it can connect and interoperate with other 802.11b or 802.11g Wi-Fi-compliant wireless routers, access points and adapters. The WUA-2340 connects to any available USB port on a laptop or desktop Windows -based computer and also includes a USB cradle. With the optional USB cradle, the WUA-2340 can be positioned virtually anywhere at a workstation to achieve the best available wireless signal reception - whether that workstation is in your office, on your deck or patio, by the pool, at the local coffee shop, or in an airport terminal while waiting to board your next flight.

The adapter works with Microsoft Windows XP and Windows 2000 operating systems to ensure that you'll be up and running on a wireless network in just a matter of seconds.

Using its default settings, the WUA-2340 automatically connects to other D-Link *Air*Plus Xtreme G™ wireless products as soon as it active.

The WUA-2340 has the newest, strongest and most advanced security features available today. When used with other 802.11 WPA (Wi-Fi Protected Access) and 802.1x compatible products in a network with a RADIUS server, the security features include:

WPA: **Wi-Fi Protected Access** which authorizes and identifies users based on a secret key that changes automatically at regular intervals. **WPA** uses **TKIP** (**Temporal Key Integrity Protocol**) to change the temporal key every 10,000 packets (a packet is a kind of message transmitted over a network.) This ensures much greater security than the standard WEP security. (By contrast, the previous WEP encryption implementations required the keys to be changed manually.)

*Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and evironmental factors lower actual data throughput rate.

Introduction (continued)

802.1x: Authentication which is a first line of defense against intrusion. In the authentication process, the Authentication Server verifies the identity of the client attempting to connect to the network. Unfamiliar clients would be denied access.

For home users that will not incorporate a RADIUS server in their network, the security for the WUA-2340, used in conjunction with other WPA-compatible 802.11 products, will still be much stronger than ever before. Utilizing the **Pre-Shared Key mode** of WPA, the WUA-2340 will obtain a new security key every time it connects to the 802.11 network. You only need to input your encryption information once in the configuration menu. No longer will you have to manually input a new WEP key frequently to ensure security. With the WUA-2340 , you will automatically receive a new key every time you connect, vastly increasing the safety of your communication.

Features and Benefits

- **Provides maximum wireless signal rate of up to 54Mbps** (**108Mbps**[1] in Turbo mode).
- **Compact size** for placement anywhere.
- **Convenience** of Plug & Play installation.
- **Fully 802.11b/802.11g compatible**.
- **Powered by the USB port**; no external power source is required.
- **USB 2.0 standard**[2].
- **Better Security with 802.1x and WPA -** In addition to 64-,128-bit WEP encryption, you can also securely connect to a wireless network using 802.1x for wireless authentication, as well as WPA (Wi-Fi Protected Access) providing you a much higher level of security for your data and communication than has previously been available.
- **Optimal wireless reception** using its cradle (included). Position the WUA-2340 almost anywhere in your workspace to achieve the best reception possible.
- **Supports Infrastructure networks via an access point and Peer-to-Peer communication in Ad-Hoc mode**.
- **User-friendly configuration and diagnostic utilities**.
- **Connects at up to 328 feet indoors**[3].
- **1 year warranty**.

[1]*Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.*

[2]*Using a USB 1.1 port will adversely affect throughput.*

[3]*Environmental factors may adversely affect range.*

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. D-Link wireless products will allow you access to the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A wireless local area network (WLAN) is a computer network that transmits and receives data with radio signals instead of wires. WLANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial to many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

People use WLAN technology for many different purposes:

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and Network Expansion - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices.

Scalability - WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are easily changed and range from Peer-to-Peer networks suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Wireless Basics *(continued)*

Installation Considerations

The WUA-2340 lets you access your network using a wireless connection from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the WUA-2340 and other network devices to a minimum - each wall or ceiling can reduce your WUA-2340 range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

Getting Started

With its default settings, the WUA-2340 will connect with other D-Link *Air*Plus Xtreme G™ products, right out of the box.

There are basically two modes of networking:

Infrastructure – using an access point or router, such as the DI-624.

Ad-Hoc – directly connecting to another computer, for Peer-to-Peer communication, using wireless network adapters on each computer, such as two or more WUA-2340 Wireless Network USB adapters.

On the following pages we will show you an example of an **Infrastructure Network** and an **Ad-Hoc Network**.

An **Infrastructure** network contains an access point or router. The **Infrastructure network** example shown on the following page contains the following D-Link network devices (your existing network may be comprised of other devices):

A wireless router - **D-Link *Air*Plus Xtreme G™ DI-624**

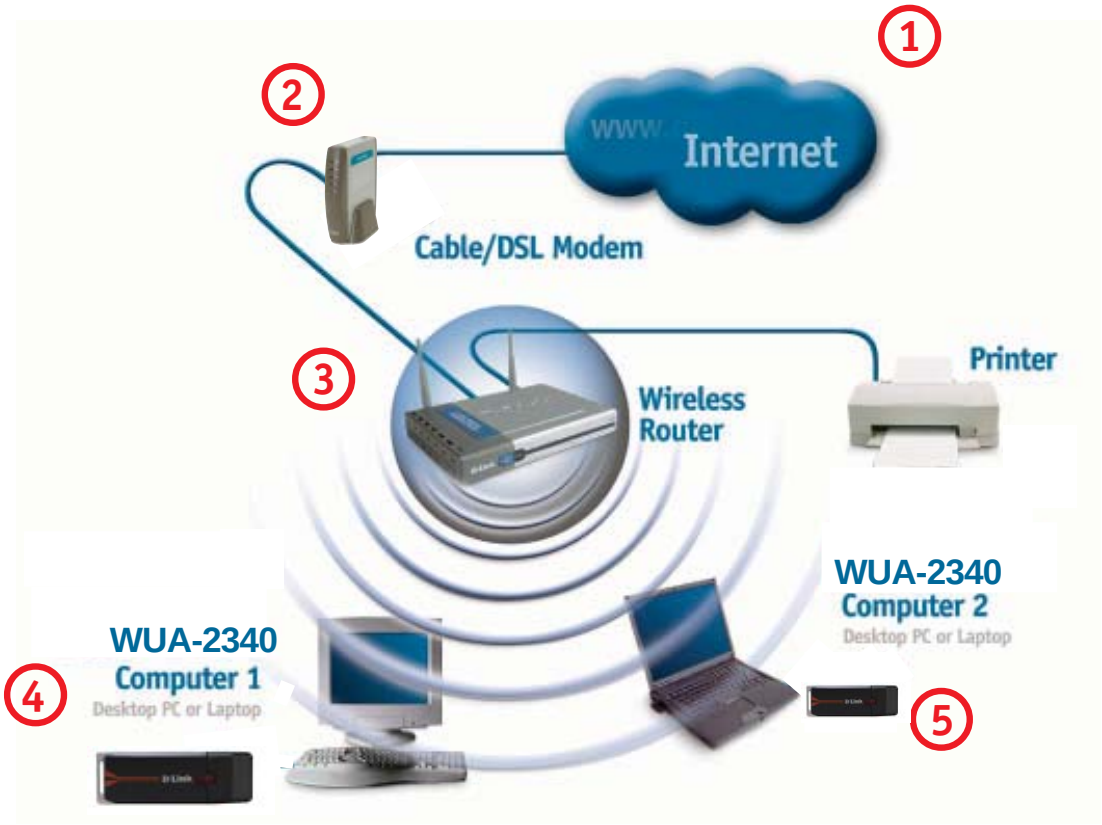
A laptop computer with a **D-Link *Air*Plus Xtreme G™ WUA-2340**

A desktop computer with a **D-Link *Air*Plus Xtreme G™ WUA-2340**

A cable modem - **D-Link DCM-201**

Getting Started (continued)

Setting up a Wireless Infrastructure Network



For a typical wireless setup at home (as shown above), please do the following:

1. You will need broadband Internet access (a cable or DSL-subscriber line into your home or office).

2. Consult with your cable or DSL provider for proper installation of the modem.

3. Connect the cable or DSL modem to your broadband router. (*See the Quick Installation Guide included with your router.*)

4. Install the D-Link *Air*Plus Xtreme G™ WUA-2340 Wireless USB 2.0 adapter into an available USB port on your desktop computer. *(See the Quick Installation Guide included with the WUA-2340.)*

5. Install the D-Link *Air*Plus Xtreme G™ WUA-2340 wireless USB 2.0 adapter into an available USB port on your laptop computer. *(See the Quick Installation Guide included with the WUA-2340.)*

Getting Started (continued)

Setting up a Wireless Ad-Hoc Network

WUA-2340
Wireless G USB 2.0 Adapter

1. Install the **D-Link *Air*Plus Xtreme G™ WUA-2340** Wireless USB 2.0 adapter into the desktop computer. *(See the Quick Installation Guide included with the product.)*

2. Install the **D-Link *Air*Plus Xtreme G™ WUA-2340** Wireless USB 2.0 adapter into the laptop computer. *(See the Quick Installation Guide included with the product.)*

3. Set the wireless configuration for the adapters to Ad-Hoc mode, set the adapters to the same channel, and assign an IP address to each computer on the Ad-Hoc network.

IP Address

When assigning IP addresses to the computers on the network, please remember that the **IP address for each computer must be in the same IP address range as all the computers in the network**, and the subnet mask must be exactly the same for all the computers in the network.

For example: If the first computer is assigned an IP address of 192.168.0.2 with a subnet mask of 255.255.255.0, then the second computer can be assigned an IP address of 192.168.0.3 with a subnet mask of 255.255.255.0, etc.

IMPORTANT: If computers or other devices are assigned the same IP address, one or more of the devices may not be visible on the network.

Using the Configuration Utility

D-Link *Air*Plus Xtreme G™ WUA-2340 uses the **Configuration Utility** as the management software. The utility provides the user an easy interface to change any settings related to the wireless adapter. After you have completed the installation of the WUA-2340 (refer to the *Quick Installation Guide* that came with your purchase) whenever you start the computer, the **Configuration Utility** starts automatically and the system tray icon is loaded in the toolbar (see illustration below.*) Clicking on the utility icon will start the **Configuration Utility**. Another way to start the **Configuration Utility** is to click on **Start>Programs>D-Link *Air*Plus Xtreme G >D-Link *Air*Plus Xtreme G Utility.**

If you are using Windows XP, you can use either the Zero Configuration Utility or the D-Link Configuration Utility.

To use the D-Link Configuration Utility with XP, right-click on the wireless network icon in the taskbar in the lower right-hand corner of your computer screen.

In the window that appears, select **View Available Wireless Networks** and click the **Advanced** button. The screen at right will appear.

Select the **Wireless Networks** tab.

Uncheck the box in the properties window that enables windows configuration.

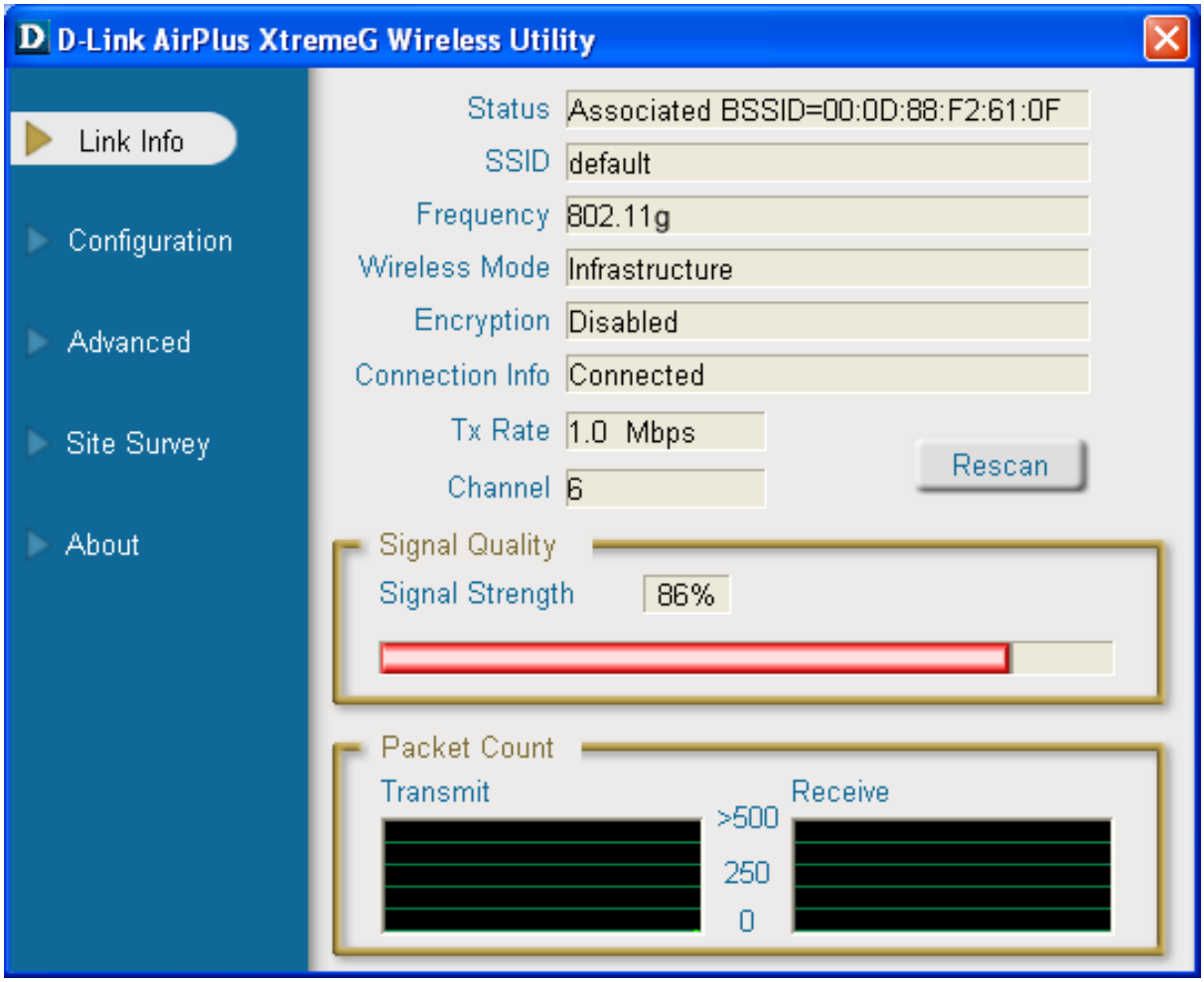
After you have done this, you can then use the D-Link Configuration Utility with XP by clicking on the D-Link Configuration Utility icon.

**Configuration Utility icon in the system tray*

If the icon does not display in the taskbar, then click on this icon on your desktop to open.

Using the Configuration Utility *(continued)*

Link Info



Status:

Displays the MAC address of the access point or router to which the WUA-2340 is associated.

SSID:

The Service Set Identifier is the name assigned to the wireless network. The factory SSID setting is **default**.

Frequency:

802.11b indicates that the WUA-2340 is communicating in the 2.4GHz band.

Wireless Mode:

Either **Infrastructure** or **Ad-Hoc** will be displayed here. (Please see the *Getting Started* section in this manual for an explanation of these two modes.)

Using the Configuration Utility *(continued)*

Encryption:

You can see if WEP (Wired Equivalent Privacy) is **Enabled** or **Disabled** here.

Connection Info:

When the WUA-2340 is connected to a wireless network, **Connected** will be displayed in this field.

Tx Rate:

The default setting is **Auto**; Tx Rate settings are automatically determined for a maximum wireless signal rate of up to 54Mbps (108Mbps* in Turbo mode).

Channel:

The default setting is **Auto**. The channel selection is automatically determined by the WUA-2340 .

Signal Quality:

Displays the signal strength and the link quality of the WUA-2340 s wireless connection to the access point or router.

Packet Count:

Displays the statistics of the data packets that are transmitted and received.

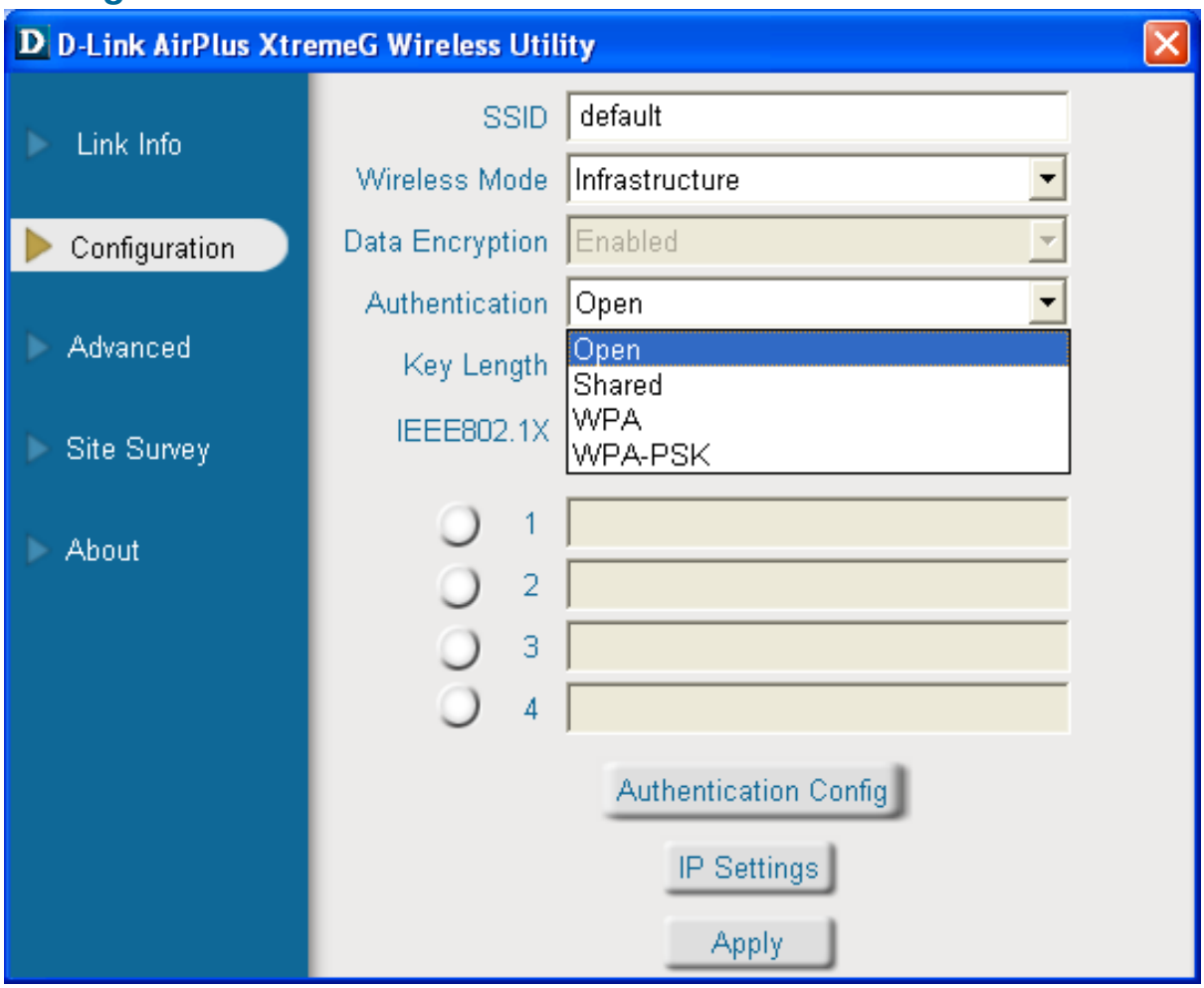
Rescan Button:

Rescans for the strongest signal with the current SSID and associates with that access point or router.

*Maximum wireless signal rate derived from 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Using the Configuration Utility *(continued)*

Configuration



SSID:

Service Set Identifier is a name that identifies a wireless network. Access points and wireless devices attempting to connect to a specific WLAN (Wireless Local Area Network) must use the same SSID. The default setting is **default**.

Wireless Mode:

Click on the pull-down menu; select from the following options:

Infrastructure - connecting to the WLAN using an access point. (This is the **default** setting).

Ad-Hoc – wireless mode used when connecting directly to a computer equipped with a wireless adapter in a Peer-to-Peer environment.

Data Encryption:

Select **Enabled** or **Disabled.**

Using the Configuration Utility *(continued)*

IP Settings

Authentication:

Choose one of the following modes:

Open Authentication – the WUA-2340 is visible to all devices on the network.

Shared Authentication – allows communication only with other devices with identical WEP settings.

WPA – Wi-Fi protected access improves upon WEP security. In conjunction with a RADIUS server and EAP (extensible authentication protocol), WPA ensures that only authenticated users access the network.

WPA-PSK – provides user authentication without a RADIUS server in the network. PSK (Pre-Shared Key) provides authentication through use of a passphrase that is shared by the devices on the network. This is the most secure encryption available without a RADIUS server.

Key Length:

Select the key length and either ASCII (e.g., a word) or hexadecimal format.

IEEE 802.1X:

Select **Enabled** or **Disabled**. 802.1x requires that a RADIUS server be included in your network in order to authenticate users.

Keys 1-4:

When you select WEP encryption, you will enter up to four WEP keys in the fields provided, using either Hexadecimal or ASCII format. From the keys you have entered, select the default key by clicking on the button next to it.

> ***Hexadecimal*** *digits consist of the numbers 0-9 and the letters A-F.*
>
> ***ASCII*** *(American Standard Code for Information Interchange) is a code for representing English letters as numbers from 0-127.*

Authentication Config:

When you enable **IEEE 802.1X** click on **Authentication Config**.
The **Advanced Security Settings** screen will appear. See the following pages for more information.

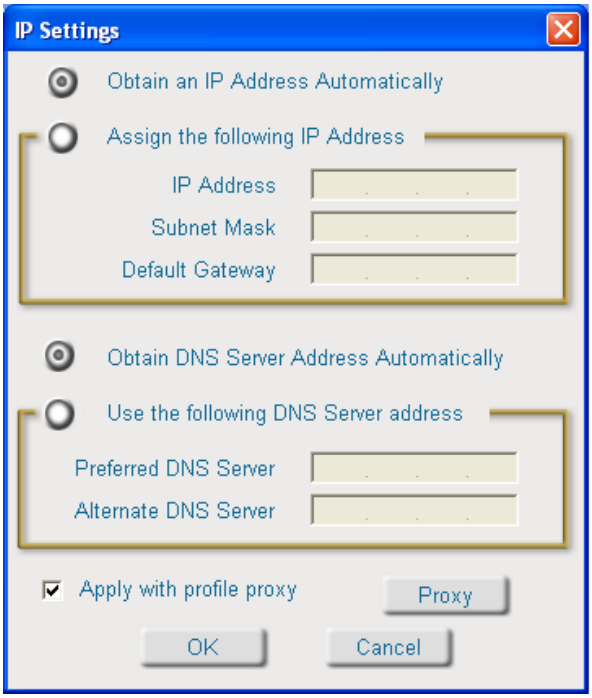
IP Settings:

When you click **IP Settings** in the Configuration window, the pop-up screen above will appear. Configure the **IP Settings** in this window.

Click **Apply** to save changes.

Using the Configuration Utility *(continued)*

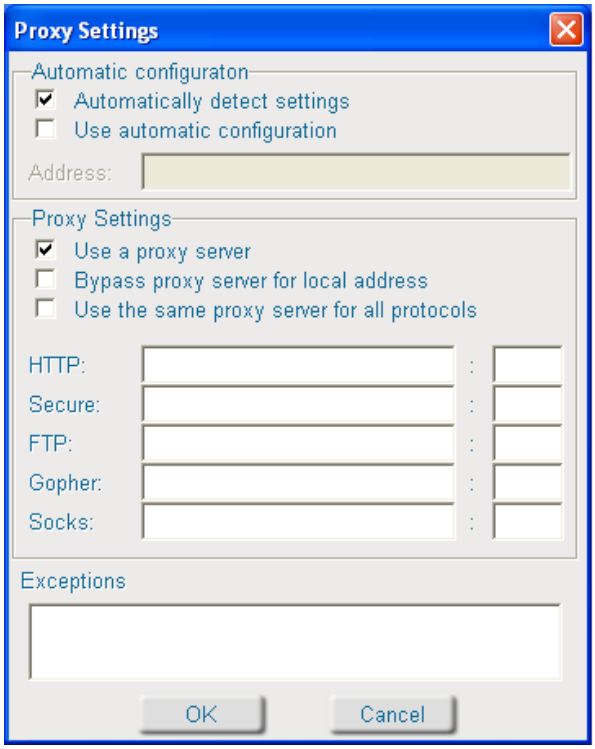
IP Settings



Using a Proxy Server

Check **Apply with a profile proxy** to use a proxy server in your network. A proxy server increases the speed of web page retrieval and can also act as a filter to limit access to specific Web sites.

Proxy Settings



Automatically detect settings:

When this option is selected, the proxy server will automatically adjust to the settings of the network.

Use automatic configuration:

Select this option and input the IP address of the proxy server to ensure that the proxy server will be utilized.

Use a proxy server:

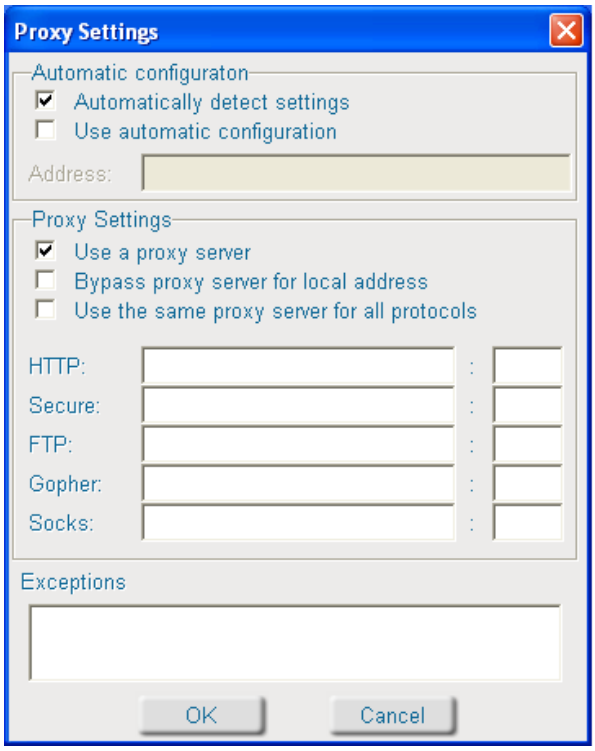
To use a proxy server, select this option.

Bypass proxy server for local address:

Select this to allow direct access to local internal addresses without including the extra step of routing the request through the proxy server.

Using the Configuration Utility *(continued)*

Proxy Settings (continued)



Use the same proxy server for all protocols:

To use the same proxy server for all protocols, select this option and enter the IP address for the proxy server in the HTTP field. Other fields will be unavailable. Enter the port number for the proxy server.

HTTP, Secure, FTP, Gopher, Socks:

if you are not using the same proxy server for all protocols, enter the proxy server address, either in IP address or domain name format and its corresponding port, for each of these protocols.

HTTP: Hyper Text Transfer Protocol is used to transfer files from a Web server onto a browser for viewing.

Secure: HTTPS protocol is based on SSL (Secure Sockets Layer) technology. It is a protocol for transmitting private documents over the Internet using a private key to encrypt data. URLs that begin with HTTPS often use the protocol to securely obtain confidential information such as credit card numbers.

FTP: File Transfer Protocol. FTP is most commonly used to upload and download files on the Internet.

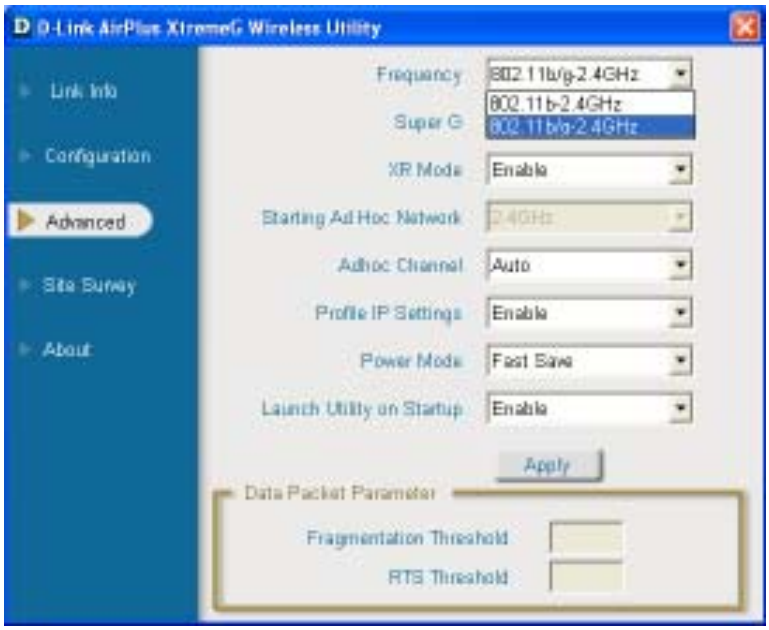
Gopher: Gopher is an early Internet protocol that organizes files in a structured list for database searching.

Socks: Socks is a proxy server that provides a simple firewall. SocksV5 offers authentication.

Exceptions: To allow specific IP addresses to bypass proxy servers, enter the IP addresses here. You can also enter “wildcards” to allow a category of website to bypass the proxy servers. For instance, if you enter www.*.com, the browser will bypass the proxy servers for most Websites.

Using the Configuration Utility *(continued)*

Advanced



Frequency:

Select 802.11b/g for compatibility with both 802.11b or 802.11g networks, or select 802.11b only.

Super G:

Selecting Super G mode enables a maximum wireless signal rate of up to 108Mbps.*

XR Mode:

Enable or Disable range extension mode. Enabling this feature allows you to increase the range of your communication without adding additional hardware.

Starting Ad Hoc Network:

When using Ad Hoc mode, select the frequency here.

Ad Hoc Channel:

Select the Ad Hoc channel when in Ad Hoc mode. When communicating in Ad Hoc mode, all devices must share the same channel.

Profile IP Settings:

You can **Enable** or **Disable** the *IP Settings* portion of your profile here. If you select **Disable** you will need to configure the IP address information each time you connect to a network. If you select **Enable** you will maintain the same IP address information each time you connect to a network.

Power Mode:

Disable -This default setting consumes the most power.
Enable - This setting consumes the least power.

Launch Utility on Startup:

Select **Enable** or **Disable**.

Click **Apply** if you have made any changes.

*Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Using the Configuration Utility *(continued)*

Advanced (continued)

Fragmentation Threshold:

This value should remain at its default setting of 2432. If you experience a high packet error rate, you may slightly increase your *Fragmentation Threshold* within the value range of 256 to 2432. Setting the *Fragmentation Threshold* too low may result in poor performance.

RTS Threshold:

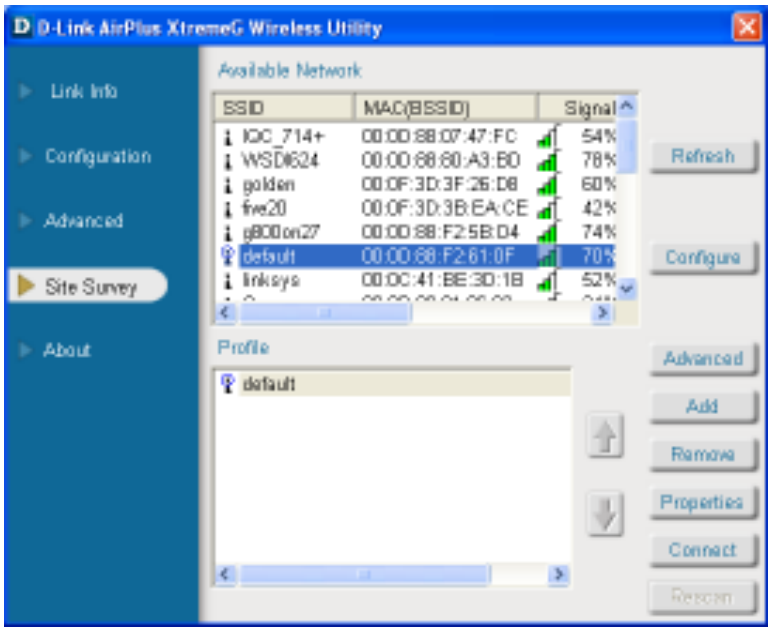
This value should remain at its default setting of 2432. If inconsistent data flow is a problem, only a minor modification should be made.

Using the Configuration Utility *(continued)*

Available Network:
The top section of the window displays the **Available Networks**. Scroll up and down the list and highlight the network to which you wish to connect. Click on the **Connect** button.

Profile:
In the lower half of the screen, you can manage the profiles that you have created for the wireless network at home, at the office and in public places. Scroll up and down and highlight the profile that you wish to configure. You can **Add** or **Remove** a profile, or configure the **Properties** of the profile in order to connect with an available network.

Site Survey



Refresh:
Click on **Refresh** to get the most updated list of available networks.

Configure:
Highlight an existing network and click **Configure**; the configuration window on the next page will appear.

Advanced:
Highlight a network; click **Advanced** to and the screen on the next page will appear.

Add:
Click **Add** and the screen on the next page will appear.

Remove:
Highlight a network profile; click **Remove** to remove a network from the profile list.

Properties:
Highlight a network profile; click **Properties** and the screen on the next page will appear.

Connect:
Highlight a network profile; click **Connect** to connect to that network.

Rescan:
Click **Rescan** to rescan and connect to the strongest signal with the current SSID.

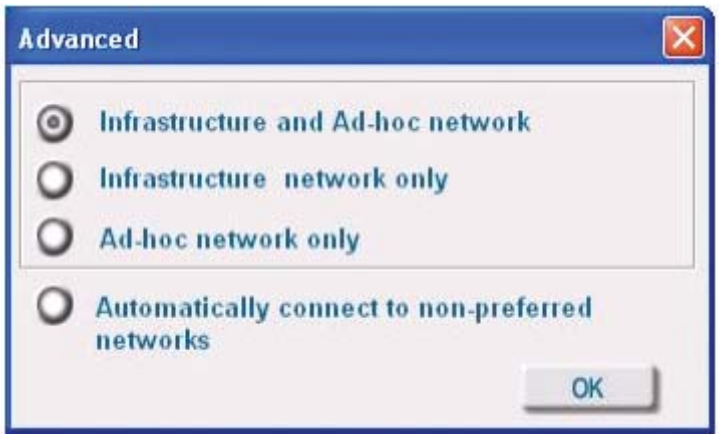
Using the Configuration Utility *(continued)*

Site Survey > Add

In this window you can select the type of network connection.

Click **OK** to save the changes.

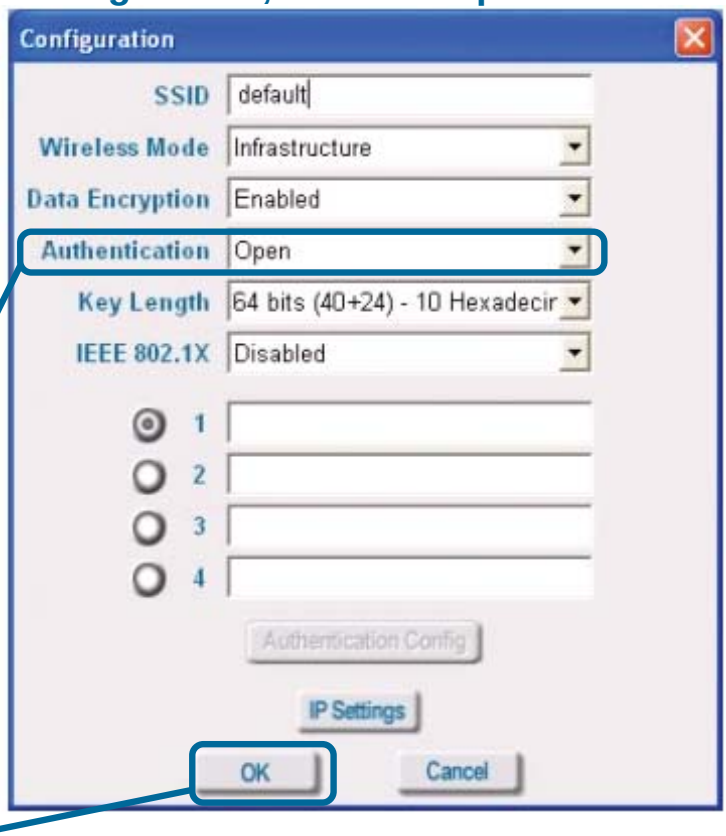
Advanced



If you clicked on **Add,** you can configure, in this window, all the properties of a profile that you wish to add to the network.

If you clicked on **Configuration** or **Properties** you can configure, in this window, all the properties of a profile that already exists in the network.

Configuration, Add or Properties



If you select **WPA** in the *Authentication* field, please see detailed instructions for configuring WPA on the following pages.

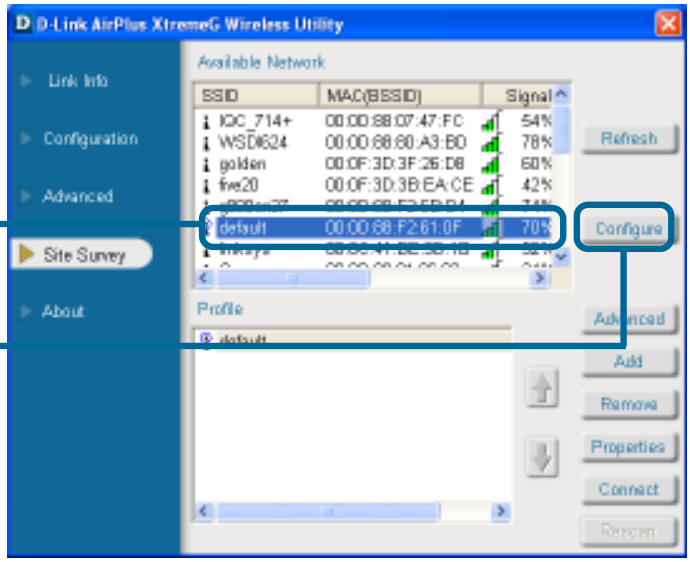
Click **OK** to save the changes.

Using the Configuration Utility *(continued)*

Authentication > WPA

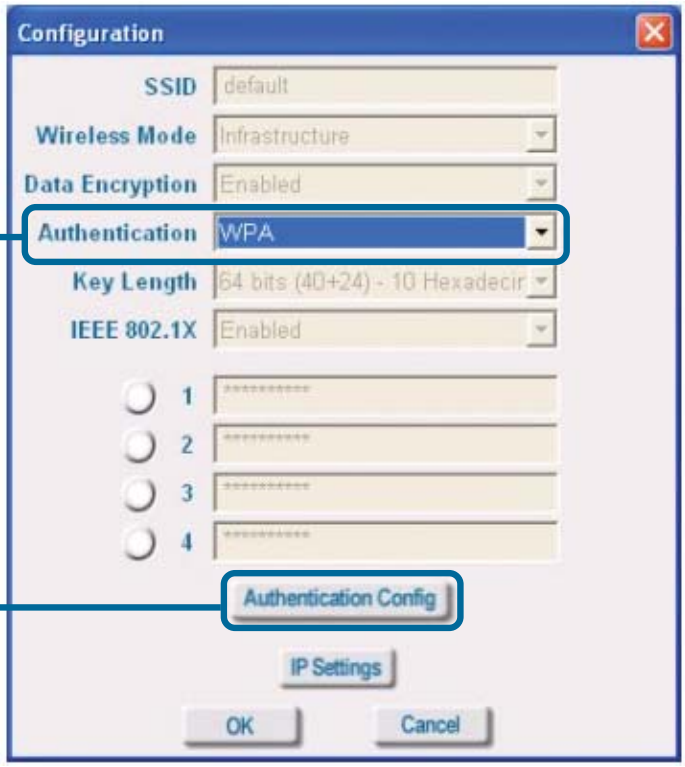
Select the available network to which you want to connect.

Click **Configure**.



Select **WPA** in the *Authentication* field.

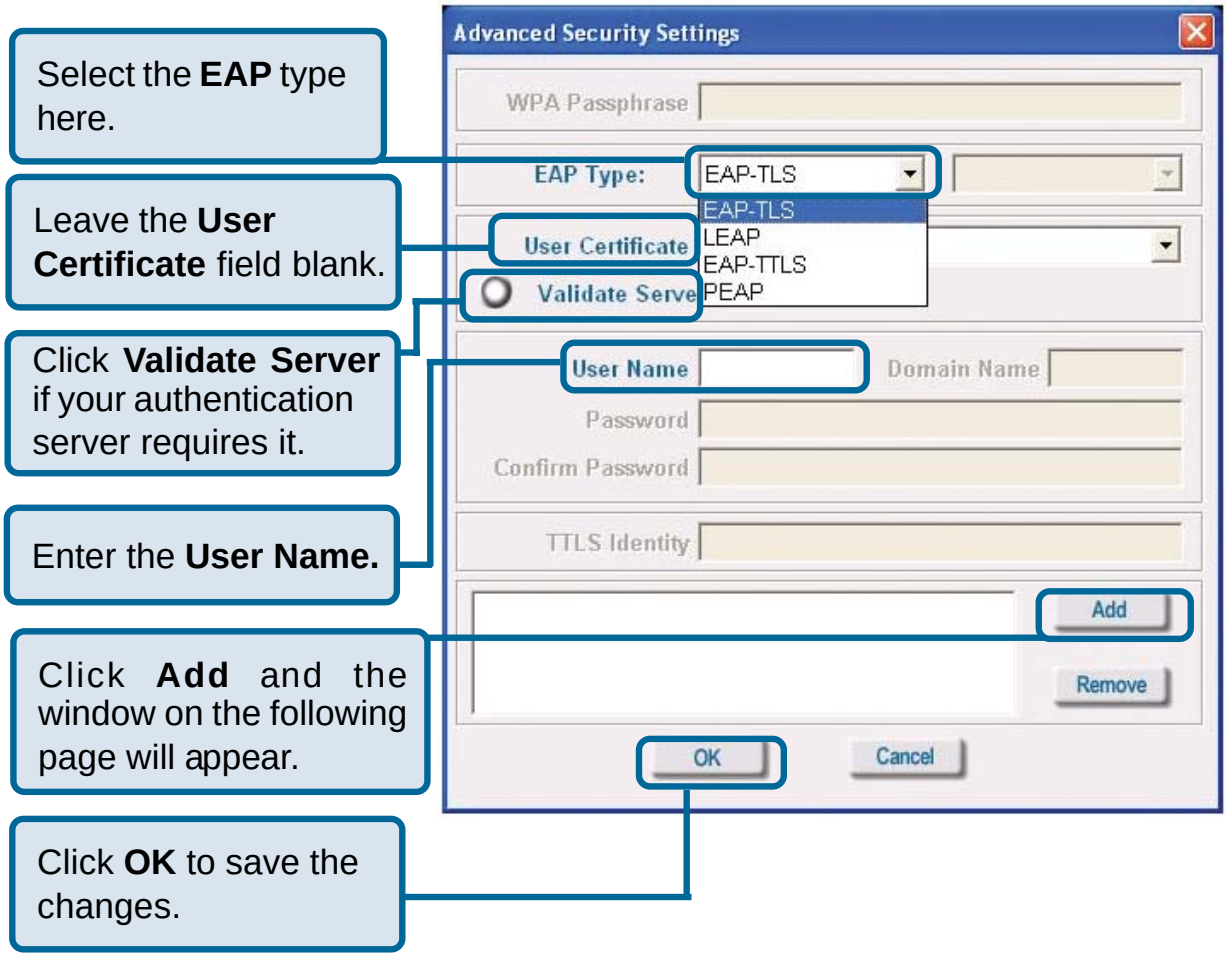
Click **Authentication Config**.



After you click **Authentication Config**, the *Advanced Security Settings* screen will appear. Please see the following page.

Using the Configuration Utility *(continued)*

Authentication > WPA > Advanced Security Settings



EAP Type: Extensible Authentication Protocols (EAP-TLS, LEAP, EAP-TTLS, PEAP) allow devices on the network to request authentication from the RADIUS server in the network. All the devices on the network must use the same EAP type when using a RADIUS server for authentication.

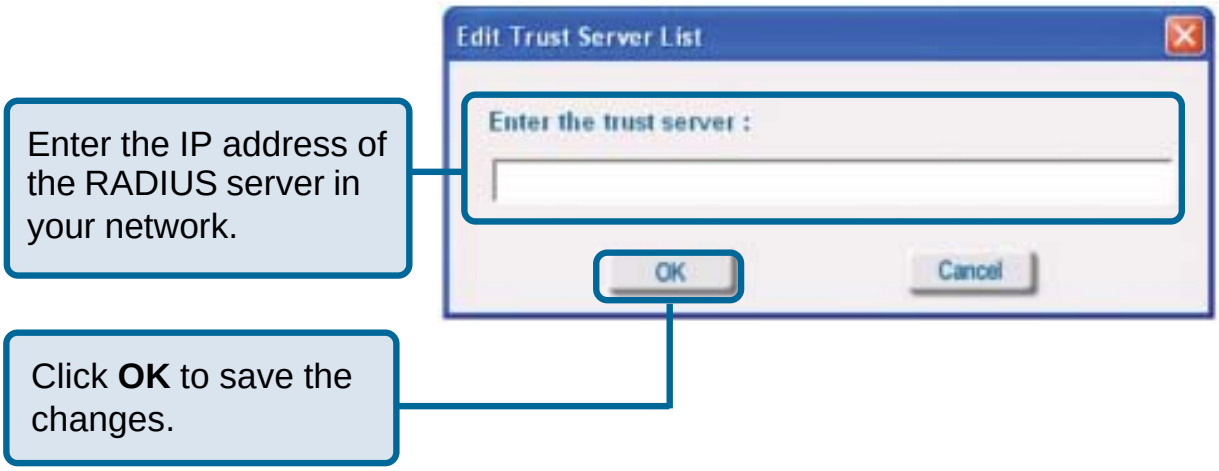
User Certificate: A certificate authority (CA) issues User Certificates to verify that a public key belongs to a specific individual or company. This field is not required here and is left blank.

Validate Server: Some RADIUS servers require that the Validate Server field be selected. Check this field if your RADIUS server requires validation.

User Name: Enter the user name (admin) here.

Using the Configuration Utility *(continued)*

Authentication > WPA > Advanced Security Settings > Add



After entering the information and clicking OK in the dialog box above,the window on the previous page will appear. Click **OK** to complete the WPA configuration.

Authentication > WPA -PSK

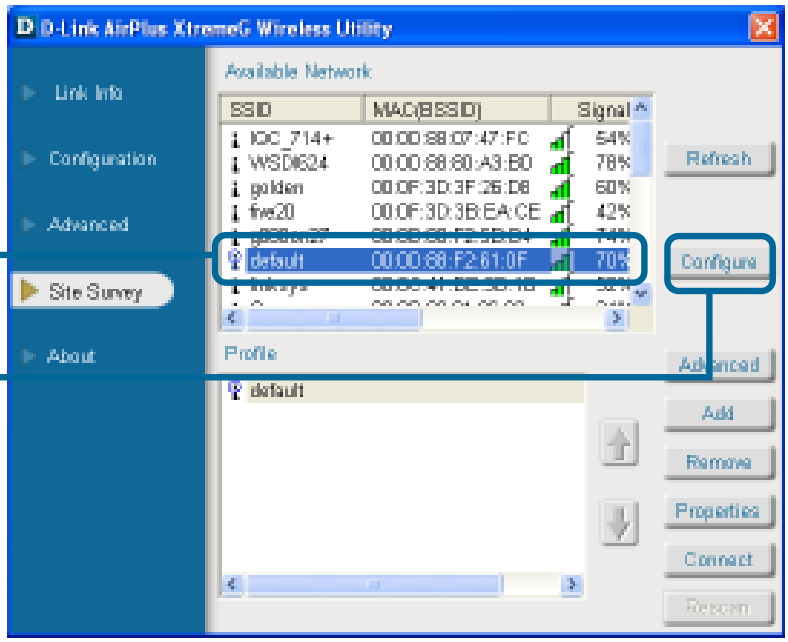
Suitable for the home user, WPA-PSK (WPA Pre-Shared Key) is a superior form of security that does not require a RADIUS server in the network.
To use WPA-PSK, enter a passphrase that is shared by all the devices on the network.
By using TKIP (Temporal Key Integrity Protocol), the security keys change at set intervals, creating a network that is more secure than one that utilizes WEP encryption alone.

Using the Configuration Utility *(continued)*

Authentication > WPA-PSK

Select the available network to which you want to connect.

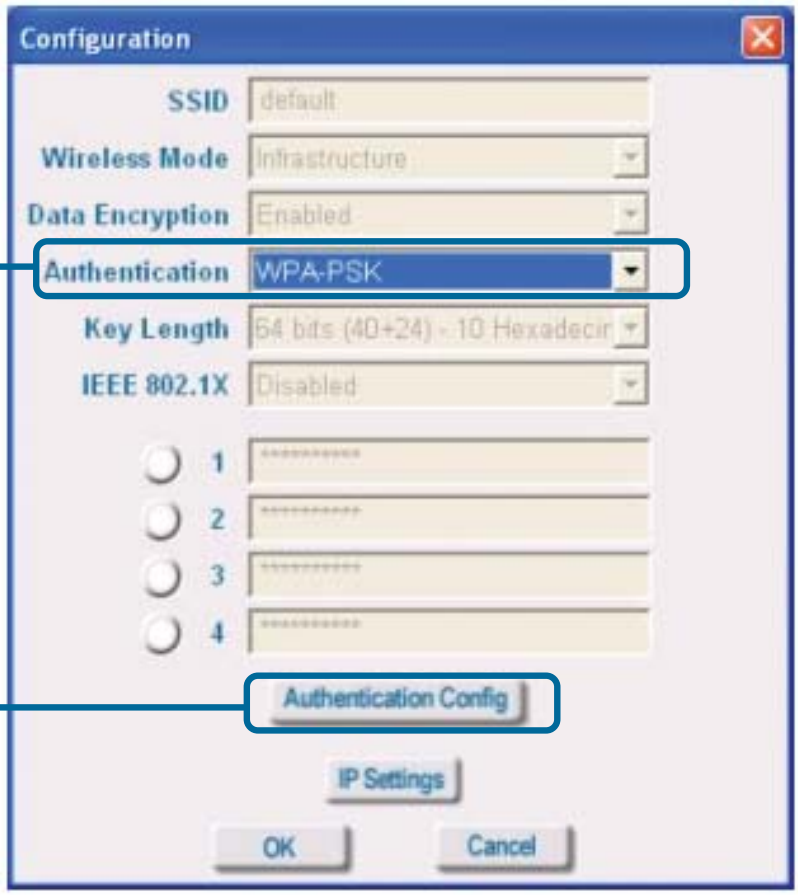
Click **Configure**.



WPA-PSK does not require a RADIUS Server in the network.

Select **WPA-PSK** in the *Authentication* field.

Click **Authentication Config**.

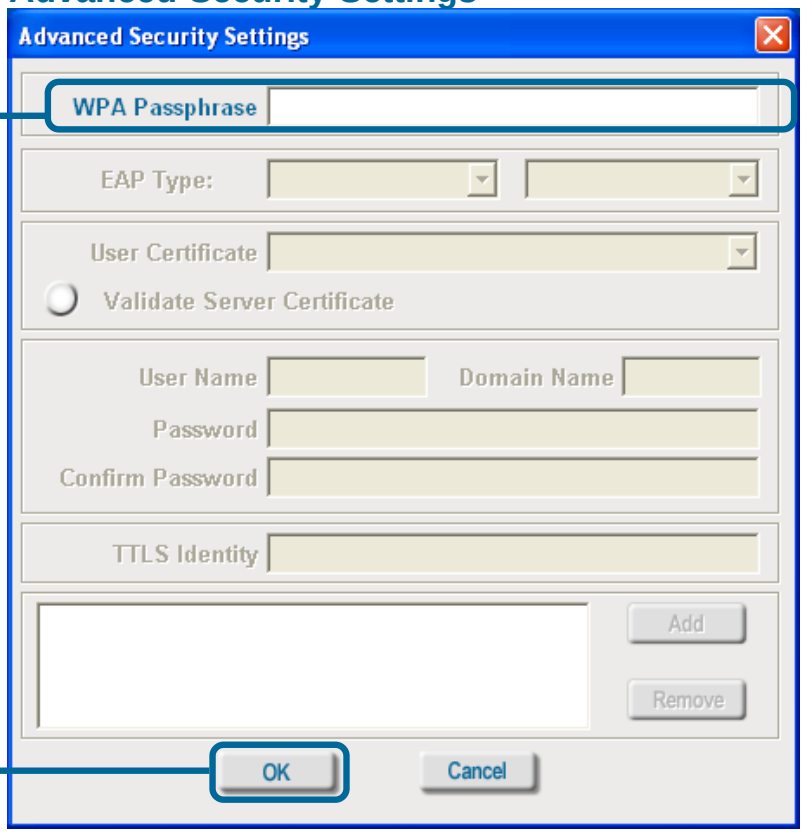


Using the Configuration Utility *(continued)*

Authentication > WPA-PSK (continued)

Advanced Security Settings

Enter the **WPA Passphrase**. All the devices on the network must share this same passphrase in order to communicate on the network.



Click **OK**.
The configuration is complete.

About

The **About** screen gives you the MAC address, Utility Version and the Driver Version of the WUA-2340.

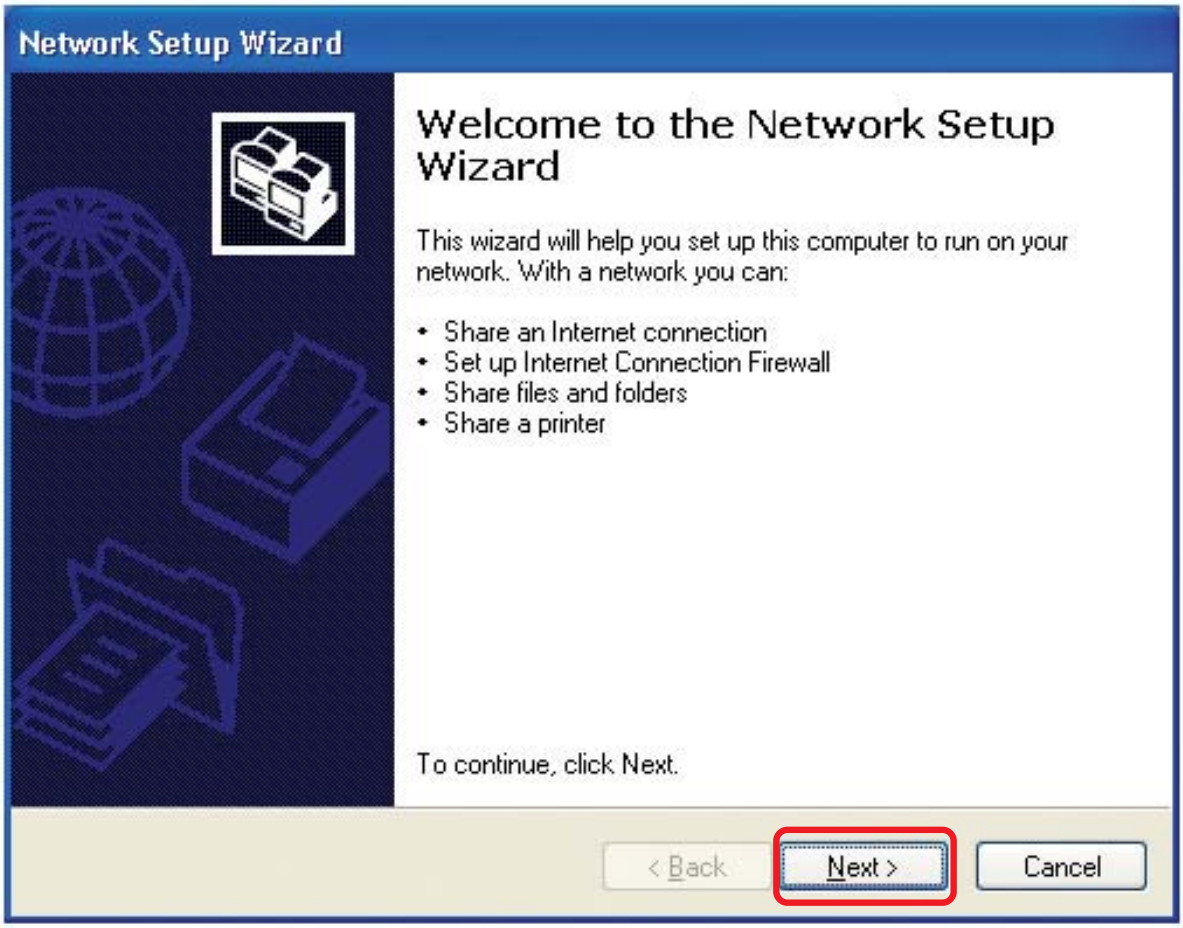
Networking Basics

Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP.**

Note: Please refer to websites such as http://www.homenethelp.com and http://www.microsoft.com/windows2000 for information about networking computers using Windows 2000/Me/98SE.

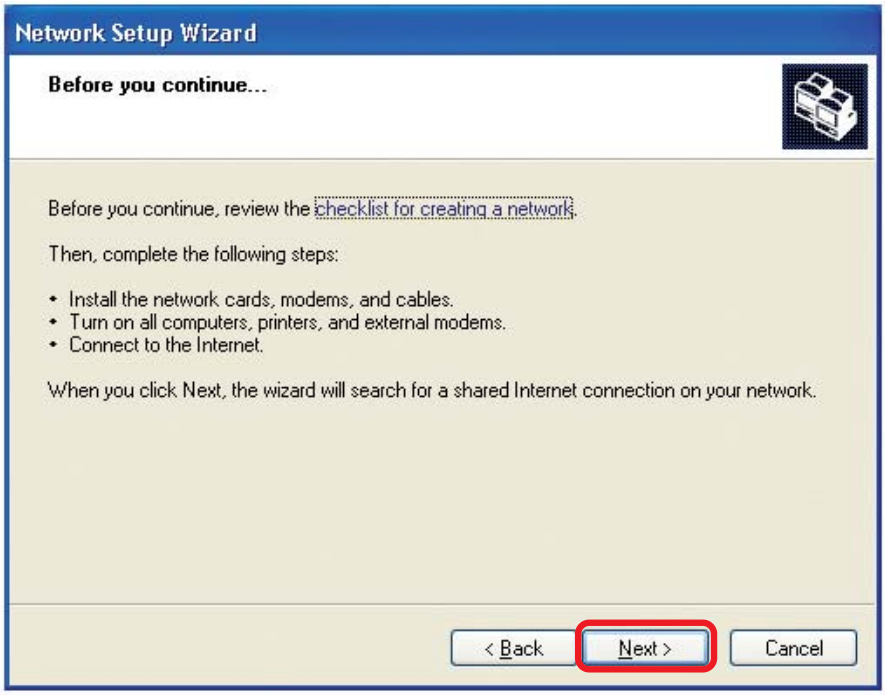
Go to **Start>Control Panel>Network Connections.**
Select **Set up a home or small office network.**



When this screen appears, click **Next.**

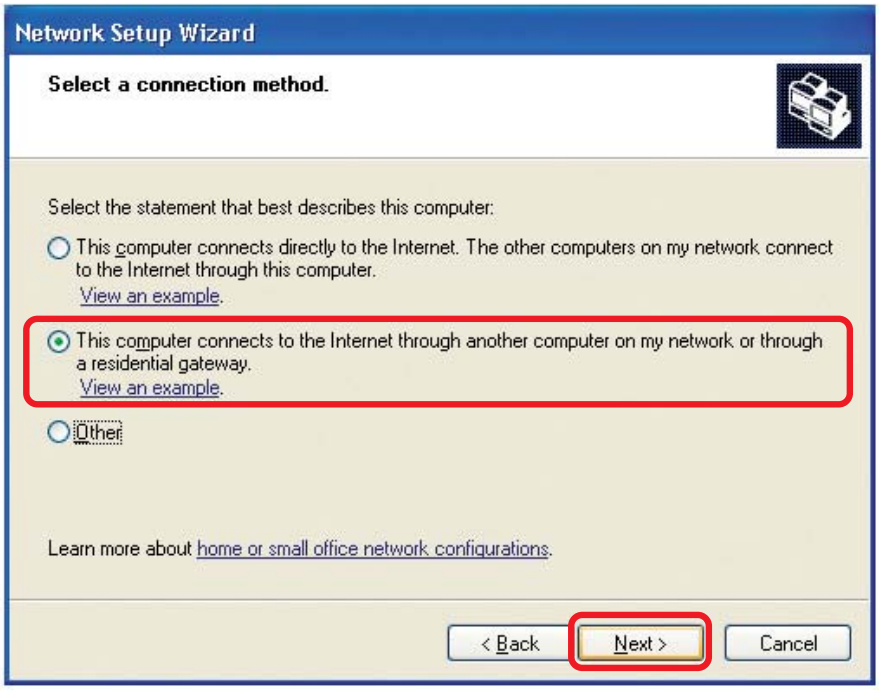
Networking Basics (continued)

Please follow all the instructions in this window:



Click **Next**.

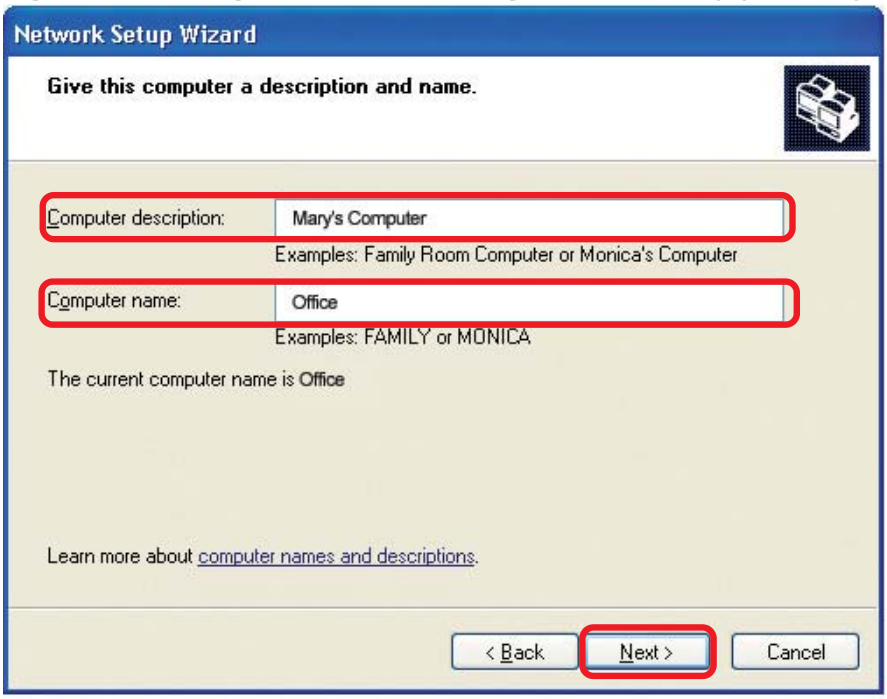
In the following window, select the best description of your computer. If your computer connects to the Internet through a router, select the second option as shown.



Click **Next**.

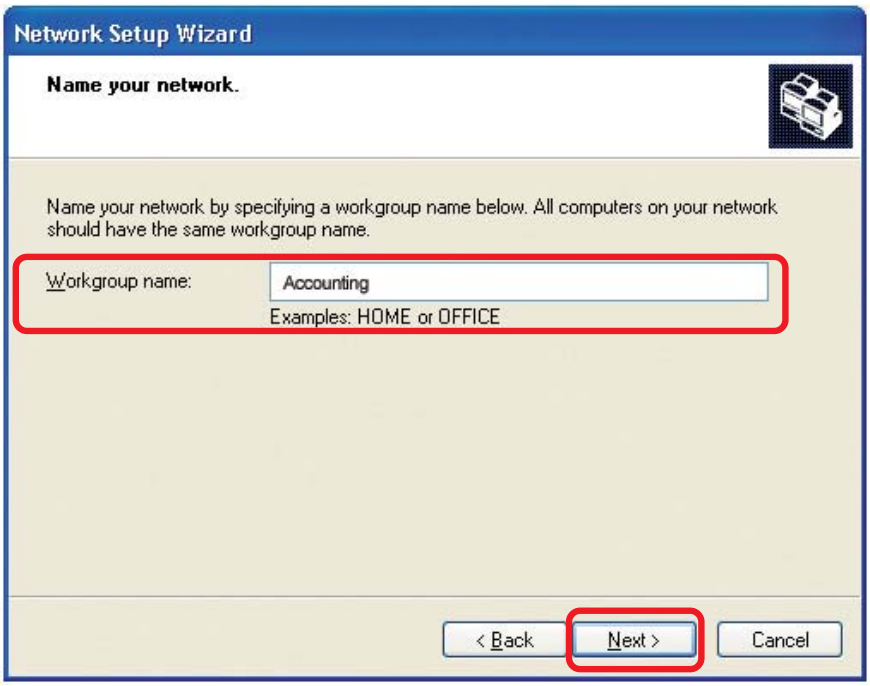
Networking Basics (continued)

Enter a **Computer description** and a **Computer name** (optional.)



Click **Next**.

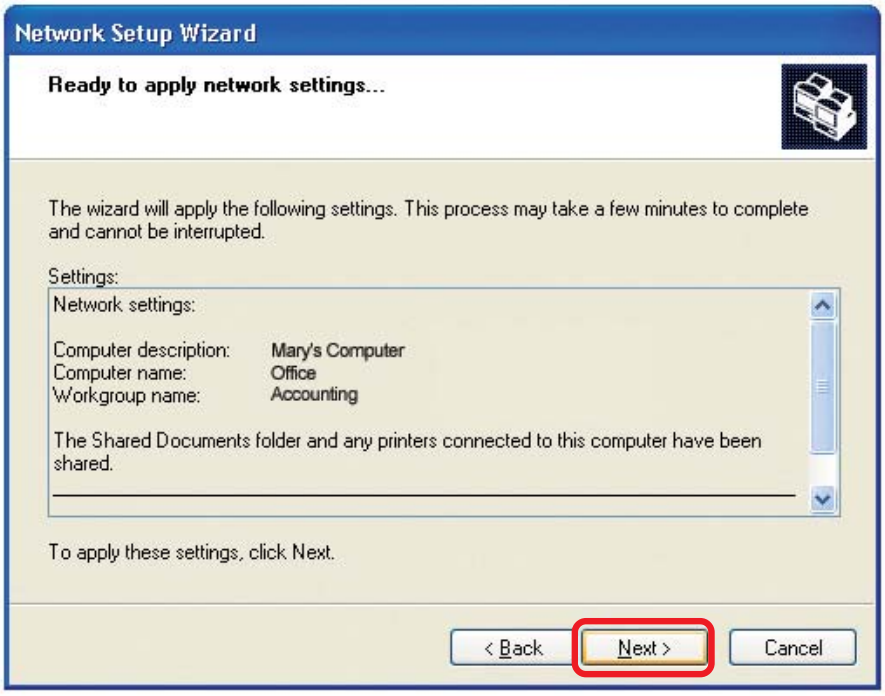
Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**



Click **Next**.

Networking Basics (continued)

Please wait while the **Network Setup Wizard** applies the changes.



When the changes are complete, click **Next**.

Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.

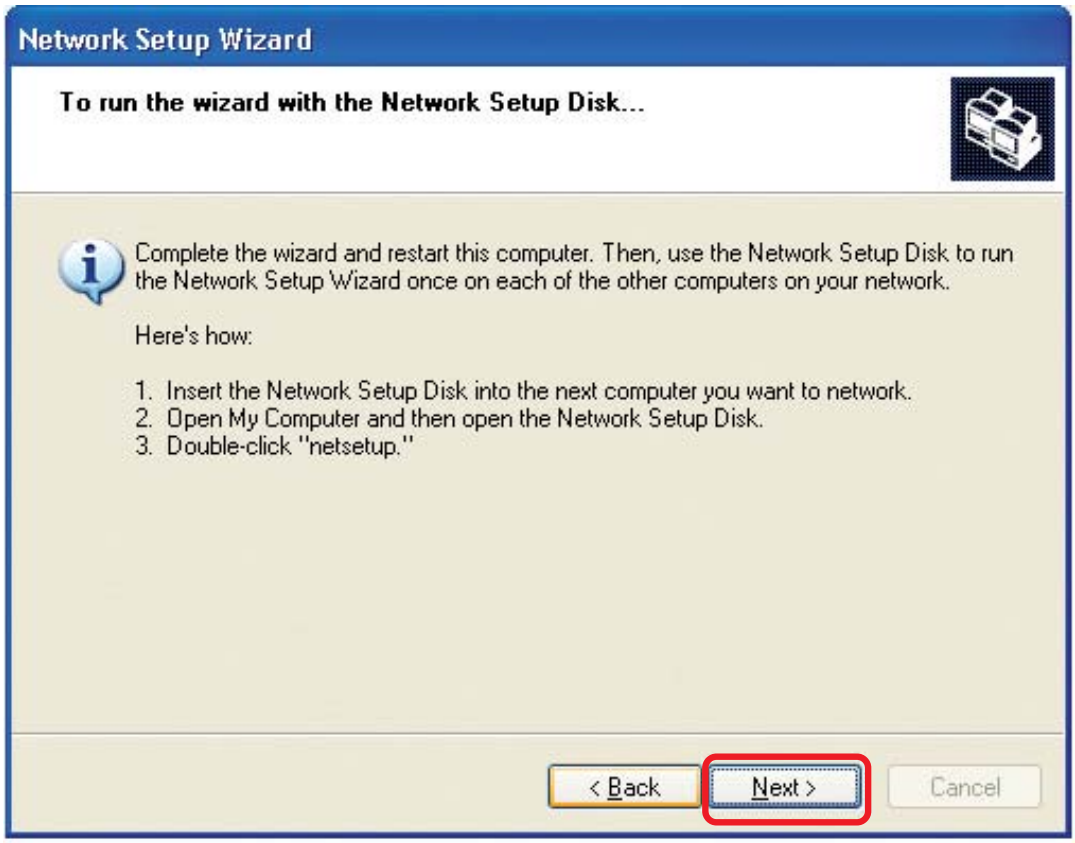
Networking Basics (continued)

In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.

Insert a disk into the Floppy Disk Drive, in this case drive **A.**

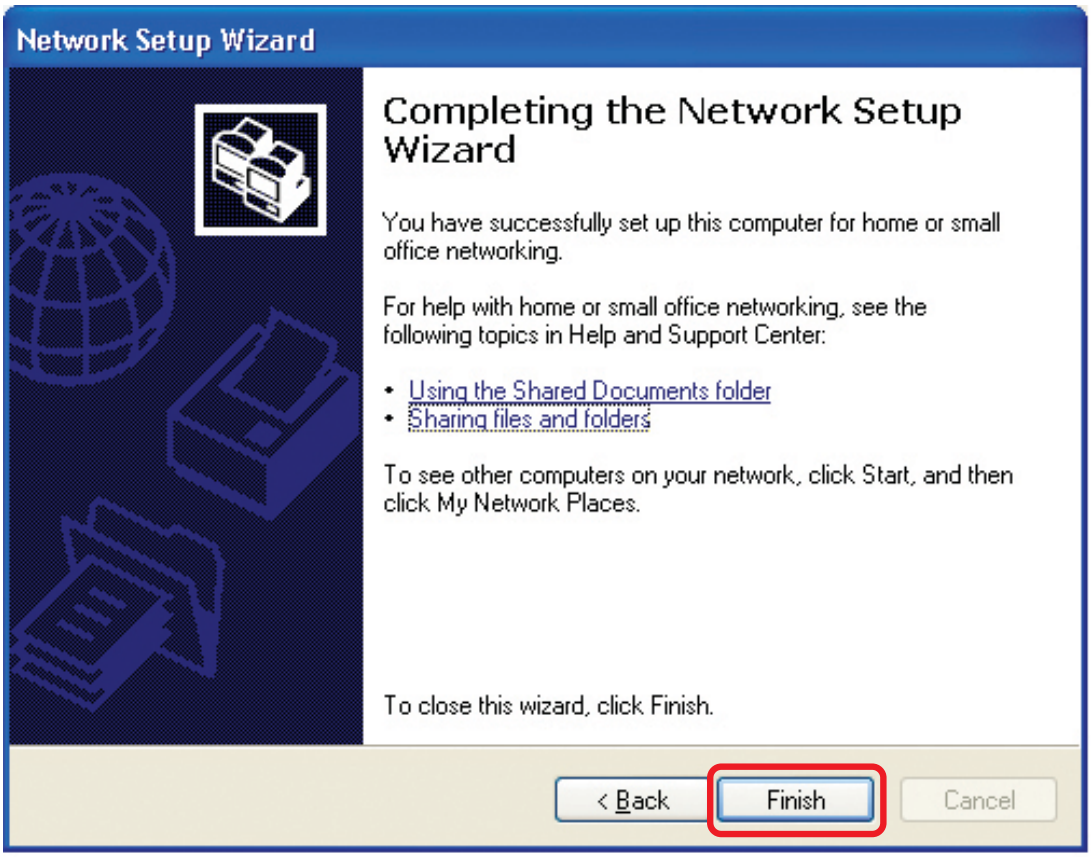
Networking Basics (continued)

Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next.**

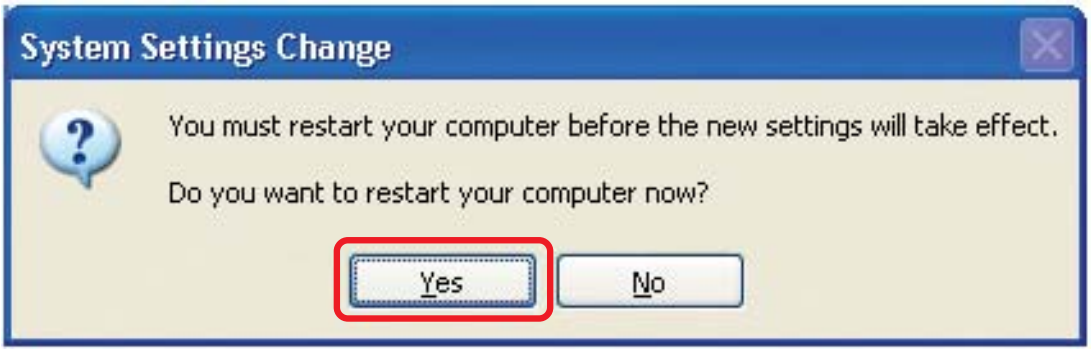


Networking Basics (continued)

Please read the information on this screen, then click **Finish** to complete the **Network Setup Wizard**.



The new settings will take effect when you restart the computer. Click **Yes** to restart the computer.



You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

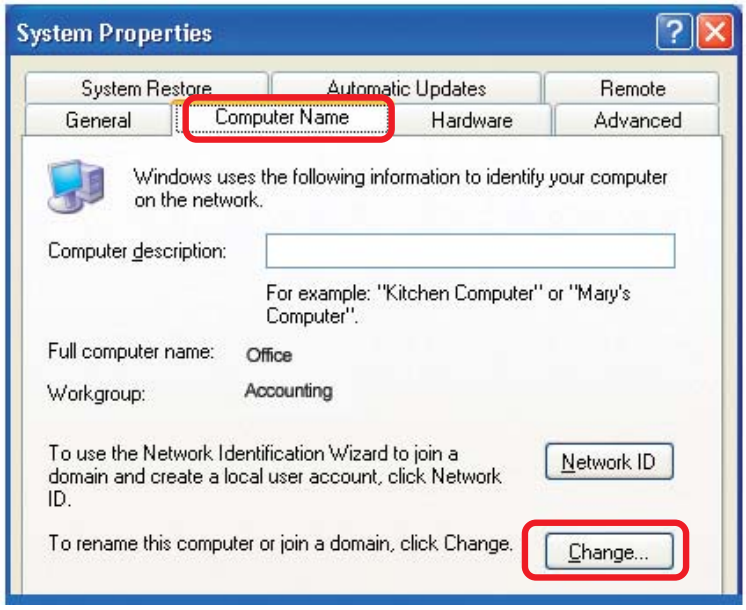
Networking Basics (continued)

Naming Your Computer

To name your computer in **Windows XP**, please follow these directions:

- Click **Start** (in the lower left corner of the screen).
- **Right-click** on **My Computer.**
- Select **Properties.**

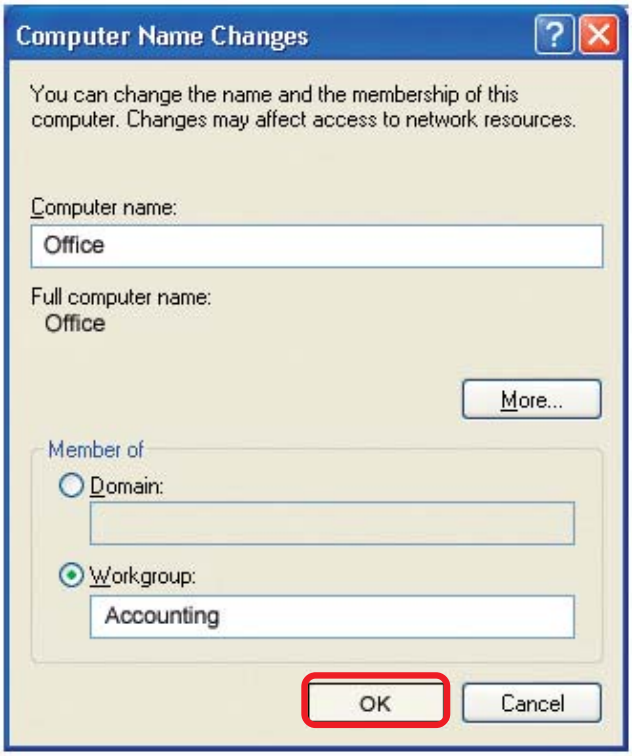
- Select the **Computer Name Tab** in the System Properties window.
- You may enter a **Computer Description** if you wish; this field is optional.
- To rename the computer and join a domain, click **Change**.



Networking Basics (continued)

Naming Your Computer

- In this window, enter the **Computer name**.
- Select **Workgroup** and enter the name of the **Workgroup**.
- All computers on your network must have the same **Workgroup** name.
- Click **OK**.



Checking the IP Address in Windows XP

All wireless adapter-equipped computers in your network must be in the same IP address range (see **Getting Started** in this manual for a definition of IP address range.) To check on the IP address of an adapter, please do the following:

- Right-click on the **Local Area Connection icon** in the task bar.
- Click on **Status**.

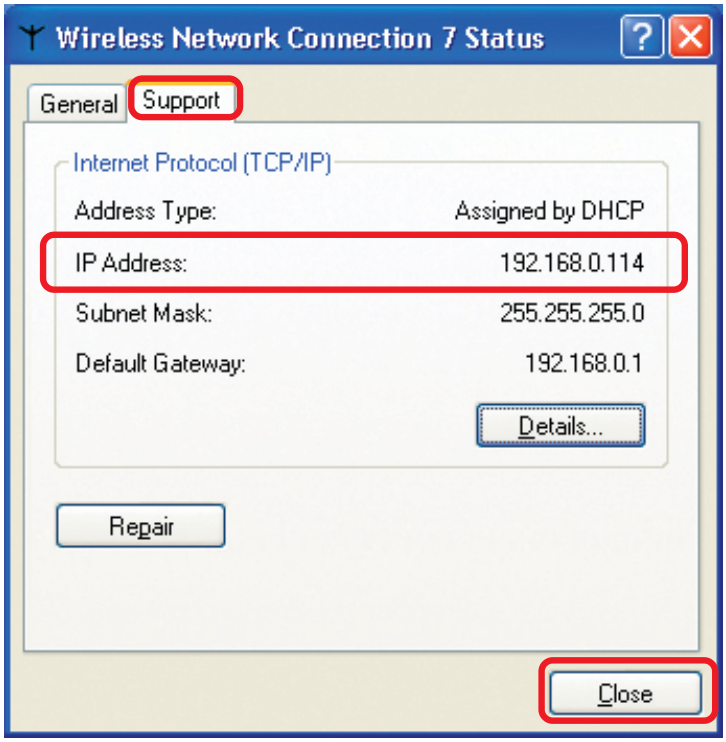
Networking Basics (continued)

Checking the IP Address in Windows XP

This window will appear.

- Click the **Support tab**.

- Click **Close**.



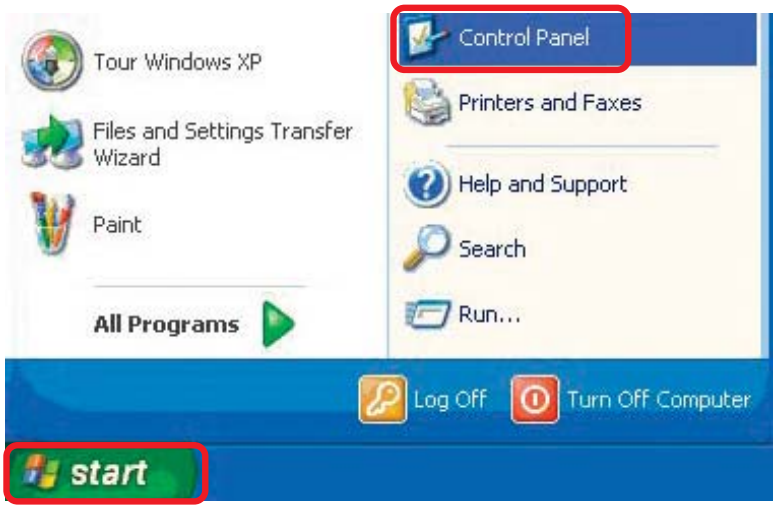
Assigning a Static IP Address in Windows XP/2000

Note: Many broadband routers will automatically assign IP addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable router you will not need to assign static IP addresses.

If you are not using a DHCP capable router, or you need to assign a static IP address, please follow these instructions:

- Go to **Start**.

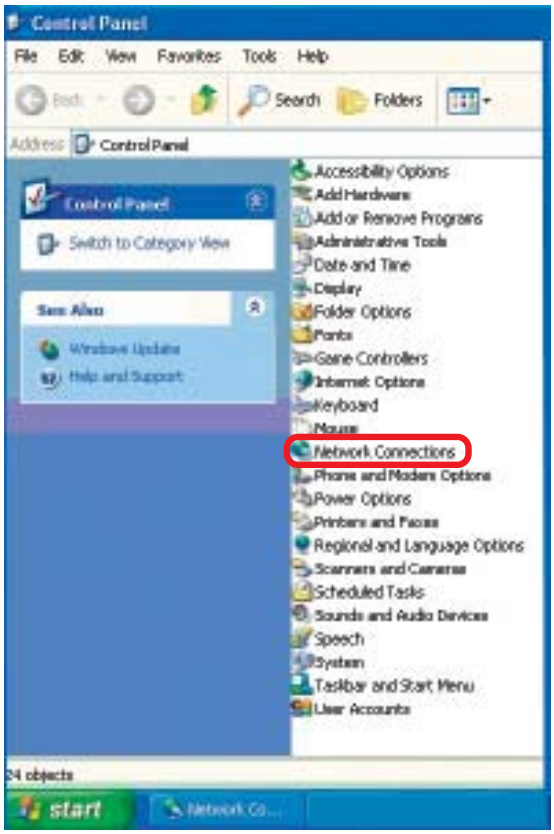
- Click on **Control Panel**.



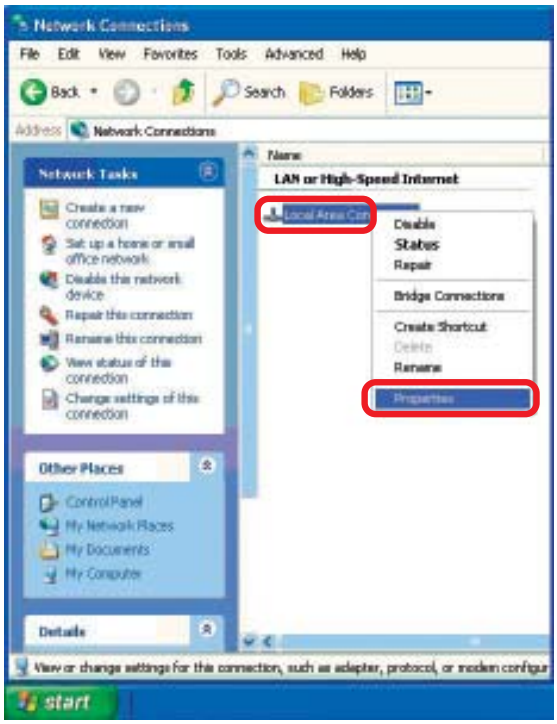
Networking Basics (continued)

Assigning a Static IP Address in Windows XP/2000

- Double-click on **Network Connections**.



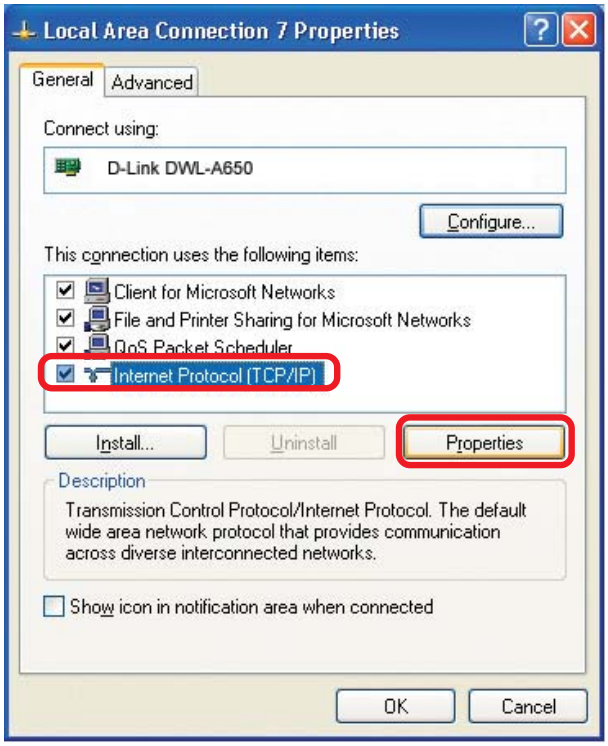
- Right-click on **Local Area Connections**.
- Click on **Properties**.



Networking Basics (continued)

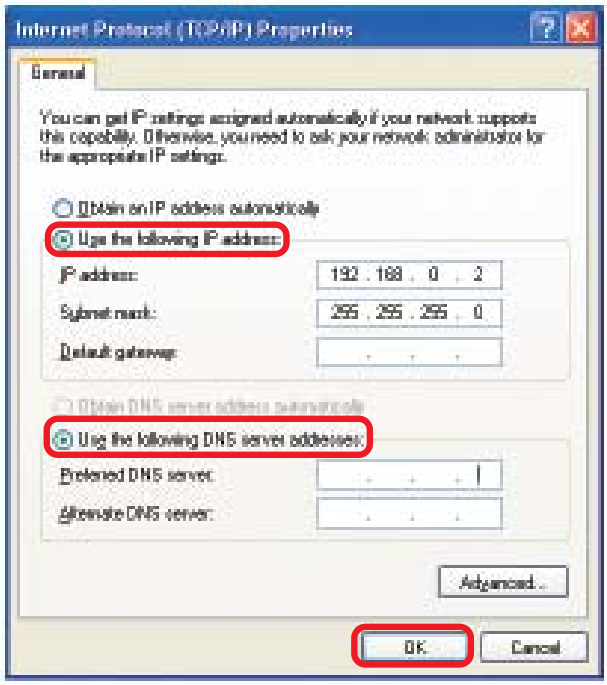
Assigning a Static IP Address in Windows XP/2000

- Click on **Internet Protocol (TCP/IP).**
- Click **Properties.**



- Input your **IP address and subnet mask.** (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)
- Input your DNS server addresses. (Note: If you are entering a DNS server, you must enter the IP address of the Default Gateway.)

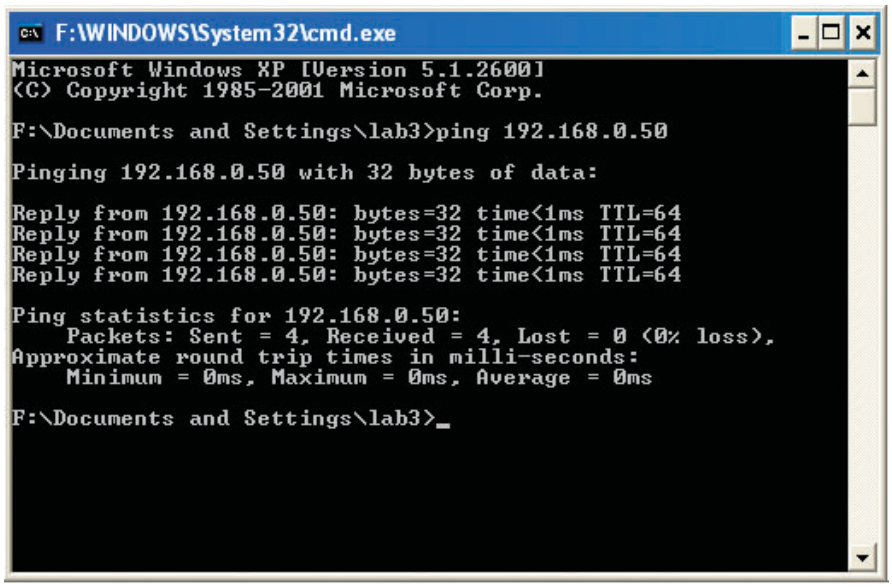
The DNS server information will be supplied by your ISP (Internet Service Provider.)



- Click **OK.**

Networking Basics (continued)

Checking the Wireless Connection by Pinging in Windows XP and 2000



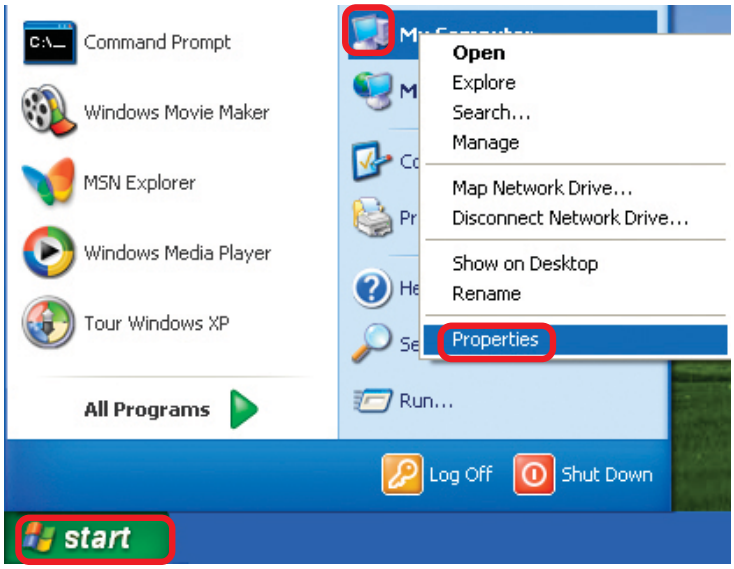
Go to **Start** > **Run** > type **cmd**. A window similar to this one will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP address** of the wireless router or access point. A good wireless connection will show four replies from the wireless router or access point, as shown.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the WUA-2340. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows XP. If you have another operating system, these solutions will still apply although the appearance on your computer screen may differ.)

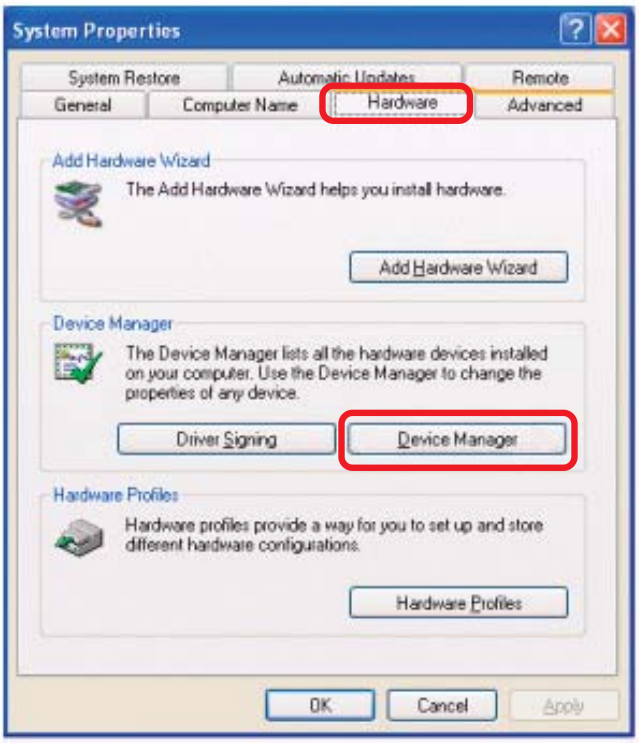
1. How do I check to see that the drivers for the WUA-2340 are installed properly?

- Go to **Start** > **My Computer** > **Properties**.



- Select the **Hardware Tab**.

- Click **Device Manager**.

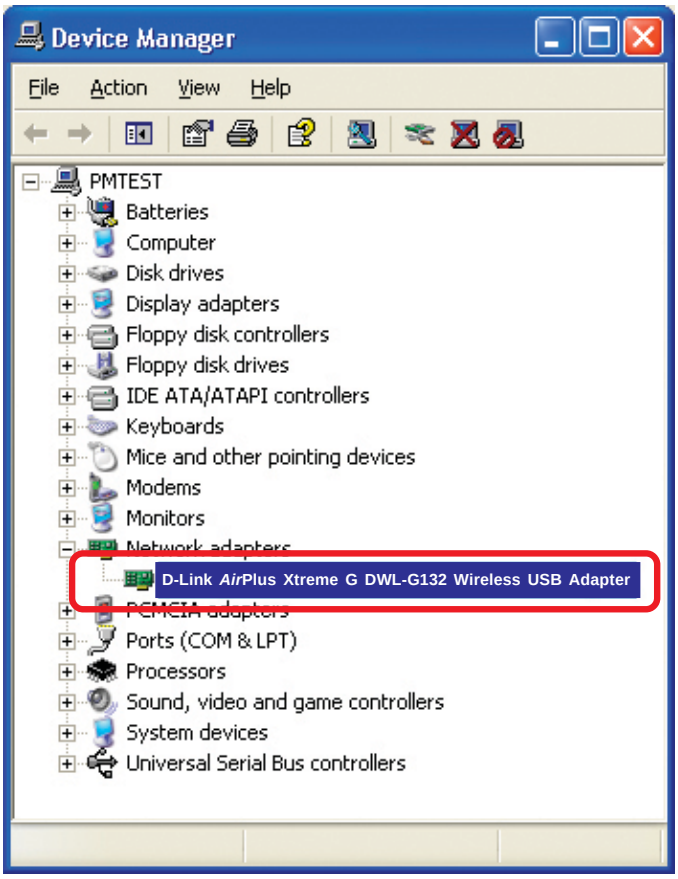


Troubleshooting (continued)

- Double-click on **Network Adapters**.

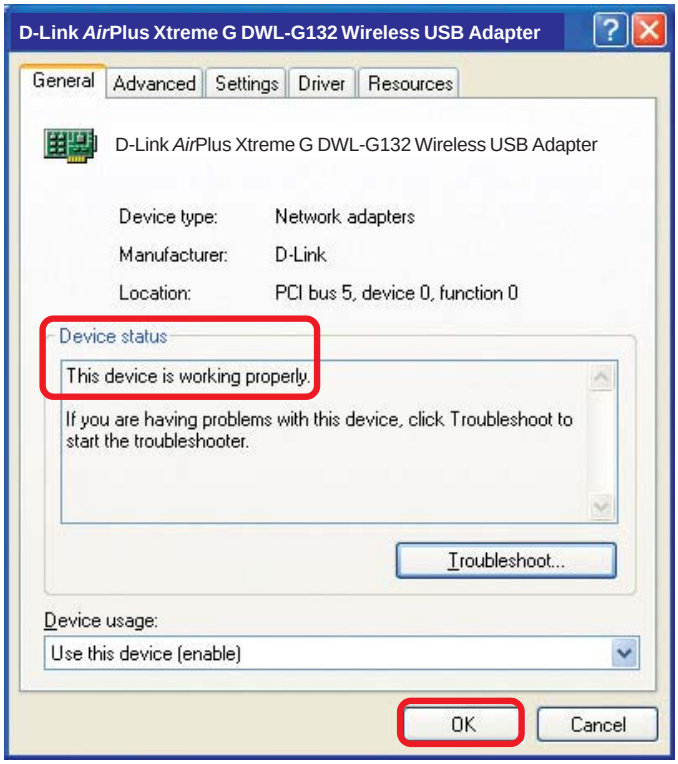
- Right-click on **D-Link *Air*Plus G WUA-2340 Wireless USB Adapter**.

- Select **Properties** to check that the drivers are installed properly.



- Look under **Device Status** to check that the device is working properly.

- Click **OK**.



Troubleshooting (continued)

2. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

3. Why does my wireless connection keep dropping?

- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your router, access point and wireless adapter to a different channel to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

4. Why can't I get a wireless connection?

If you have enabled encryption on the WUA-2340 , you must also enable encryption on all wireless devices in the network in order to establish a wireless connection.

- The encryption settings are: 64- or 128-bit. Make sure that the encryption bit level is the same on the router and the WUA-2340.
- Make sure that the SSID on the wireless router (if you have one in your network) and the WUA-2340 are exactly the same. If they are not, wireless connection will not be established. The default SSID is **default**.

Technical Specifications

Standard

- USB 2.0[1]
- IEEE 802.11g
- IEEE 802.11b

Bus Type

- USB 2.0

Temperature

- Operating: 0ºC to 40ºC (32ºF to 104ºF)
- Storing: -20ºC to 75ºC (4ºF to 167ºF)

Humidity:

- 80% maximum, non-condensing

Antenna Type:

- Omni-directional

Modulation Technology:

- Orthogonal Frequency Division Multiplexing (OFDM)
- Complimentary Code Keying (CCK)

Security:

- 64-, 128-bit WEP
- WPA - Wi-Fi Protected Access

Data Rates:

- 54, 48, 36,24, 18, 11, 9, 6 5.5, 2, 1Mbps (with Automatic Fallback)

Frequency Range:

- 2.4GHz to 2.462GHz

Range:[2]

- Indoors: Up to 328 feet (100 meters)
- Outdoors: Up to 1,312 feet (400 meters)

Media Access Control:

- CSMA/CA with ACK

1 - Using a USB 1.1 port will adversely affect range
2 - Environmental factors may adversely affect wireless signal range

Technical Specifications (continued)

Receiver Sensitivity:

- 54Mbps OFDM
- 48Mbps OFDM
- 36Mbps OFDM
- 24Mbps OFDM
- 18Mbps OFDM
- 12Mbps OFDM
- 11Mbps OFDM
- 9Mbps OFDM
- 6Mbps OFDM
- 5.5Mbps CCK
- 2Mbps QPSK
- 1Mbps BPSK

Transmitter Output Power:

- 14Bm ± 2dB

Physical Dimensions:

- L = 3.3 inches
- W = 2.1 inches
- H = 0.2 inches

Weight:

- 0.021 lb. (4.4g)

Certifications:

- FCC Part 15 B/C

Warranty:

- 1 year

D-Link AirPlus™ G products can transfer data up to 5 times faster than standard 802.11b networks. They are also interoperable with 802.11b compliant wireless devices.

Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link Technical Support through our website, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:
(877) 453-5465
24 hours a day, seven days a week.

D-Link Technical Support over the Internet:
http://support.dlink.com
email:support@dlink.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
(800) 361-5265
Monday to Friday 7:30am to 12:00am EST

D-Link Technical Support over the Internet:
http://support.dlink.ca
email:support@dlink.ca

Warranty and Registration
(USA only)

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- Products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link products described below will be free from material defects in workmanship and materials from the date of original retail purchase of the product, for the period set forth below applicable to the product type ("Warranty Period"), except as otherwise stated herein.

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund at D-Link's sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date or original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for hardware and software of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.
- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.
- Return Merchandise Ship-To Address

USA: 17595 Mt. Herrmann St., Fountain Valley, CA 92708
Canada: 2180 Winston Park Drive, Oakville, ON, L6H 5W1 (Visit http://www.dlink.ca for detailed warranty information within Canada)

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

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CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: 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 communication. 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.

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.

FCC Caution:
The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment; such modifications could void the user's authority to operate the equipment.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
End users must follow the specific operating instructions for satisfying RF exposure compliance.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

This equipment has been SAR-evaluated for use in laptops (notebooks) with side slot configuration.

For a detailed warranty outside the United States, please contact the corresponding local D-Link office.

Register your D-Link product online at http://support.dlink.com/register/