D-Link *Air*Plus™ G
DWL-G700AP

2.4GHz
Wireless Access Point

Manual

D-Link®
Building Networks for People

FCC Warning Statement

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.

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 the equipment.

Prohibition of Co-location

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

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna.

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements – Article 3

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1 and EN 301 489-17 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328 has been conducted. These are considered relevant and sufficient.

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.

Contents

Package Contents

Contents of Package:

- **D-Link *Air*Plus™ G DWL-G700AP**
  2.4GHz Wireless Access Point
- Power Supply - 7.5V DC, 1.0A
- Manual on CD
- Quick Installation Guide
- Ethernet Cable

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

Note: Using a power supply with a different voltage rating than the one included with the DWL-G700AP will cause damage and void the warranty for this product.

System Requirements:

- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter

- Internet Explorer or Netscape Navigator version 6.0 or above, with JavaScript enabled

Introduction

At up to five times the speed of previous wireless devices (up to 54Mbps), you can work faster and more efficiently, increasing productivity. With the DWL-G700AP, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The D-Link *Air*Plus™ G DWL-G700AP Wireless Access Point is an 802.11g high-performance, wireless device that is also compatible with 802.11b devices. It is an ideal way to extend the reach and number of computers connected to your wireless network.

Capable of data transfer rates up to 54Mbps, when used with other D-Link *Air*Plus G products, the DWL-G700AP is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a large network.

Features and Benefits

- **Up to 5X Faster with *Air*Plus G Products** - high-speed wireless data transfer rates up to 54Mbps. With increased data rate and capacity, the DWL-G700AP delivers media rich content such as digital images, videos, and MP3 files much faster than standard 802.11b networks.

- **Fully 802.11b Compatible** – Fully compatible with the IEEE 802.11b standard and interoperable with all existing 802.11b compliant devices.

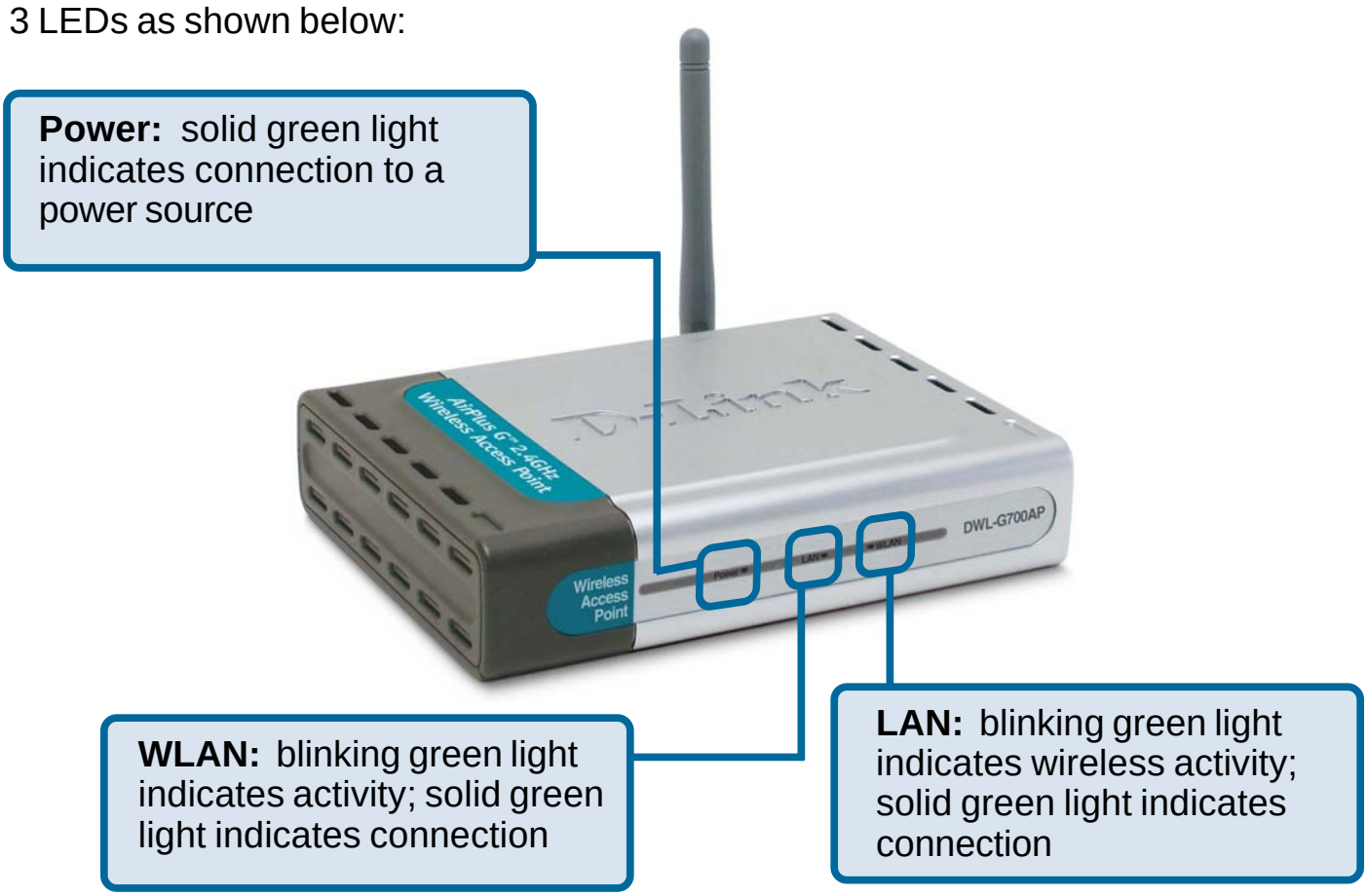
- **Network Security with up to 128-bit WEP Encryption** – Supports 64/128-bit WEP encryption for a level of security for your data and wireless communication.

- **Built-in DHCP Server** – If enabled, it will automatically assign IP addresses to wireless clients on the local network.

- **Web-based interface for Managing and Configuring** – Easy-to-use interface independent of the operating system.

LEDS

LED stands for **L**ight-**E**mitting **D**iode. The **DWL-G700AP Wireless Access Point** has 3 LEDs as shown below:



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 for 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.

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.

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

Installation Considerations

Keep in mind, 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 DWL-G700AP and other network devices to a minimum - each wall or ceiling can reduce your DWL-G700AP's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

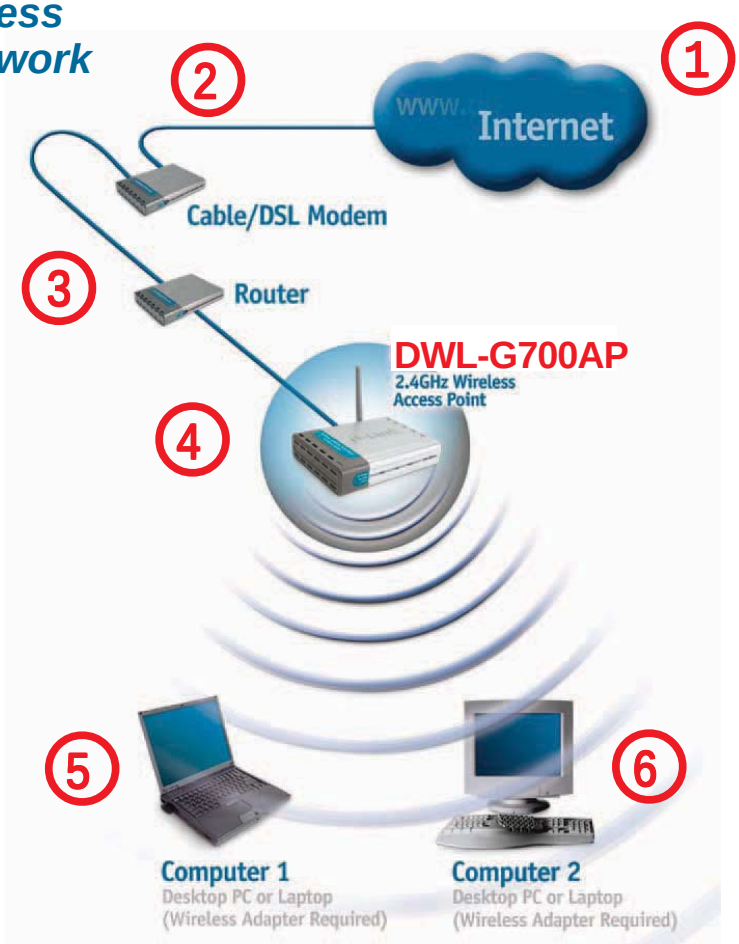
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or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

Setting up a Wireless Infrastructure Network



*Please remember that D-Link Air*Plus G *wireless devices are pre-configured to connect together, right out of the box, with their default settings.*

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. Connect the router to the D-Link *Air*Plus G DWL-G700AP.
   *(See the **Quick Installation Guide** included with the DWL-G700AP.)*

5. If you are connecting a desktop computer in your network, you can install the D-Link *Air*Plus G DWL-G510 wireless PCI adapter into an available PCI slot on your desktop computer.
   *(See the **Quick Installation Guide** included with the DWL-G510.)*

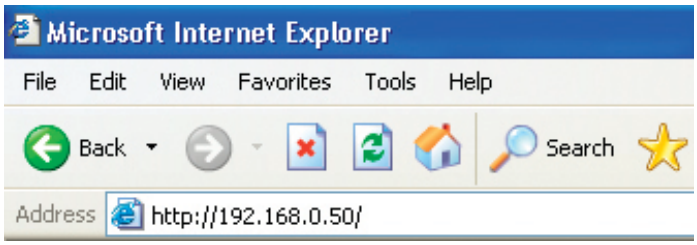
6. Install the drivers for the wireless Cardbus adapter into a laptop computer.
   (*e.g, the DWL-G630; See the **Quick Installation Guide** included with the DWL-G630.*)

Using the Configuration Utility

If you wish to change the default settings or optimize the performance of the DWL-G700AP, D-Link has included a configuration utility for this purpose.

After you have completed the initial installation and the Setup Wizard (as illustrated in the Quick Installation Guide that is included with the DWL-G700AP), you can access the configuration menu, at any time, by opening the web-browser and typing in the IP address of the DWL-G700AP. The DWL-G700AP's default IP address is shown below:

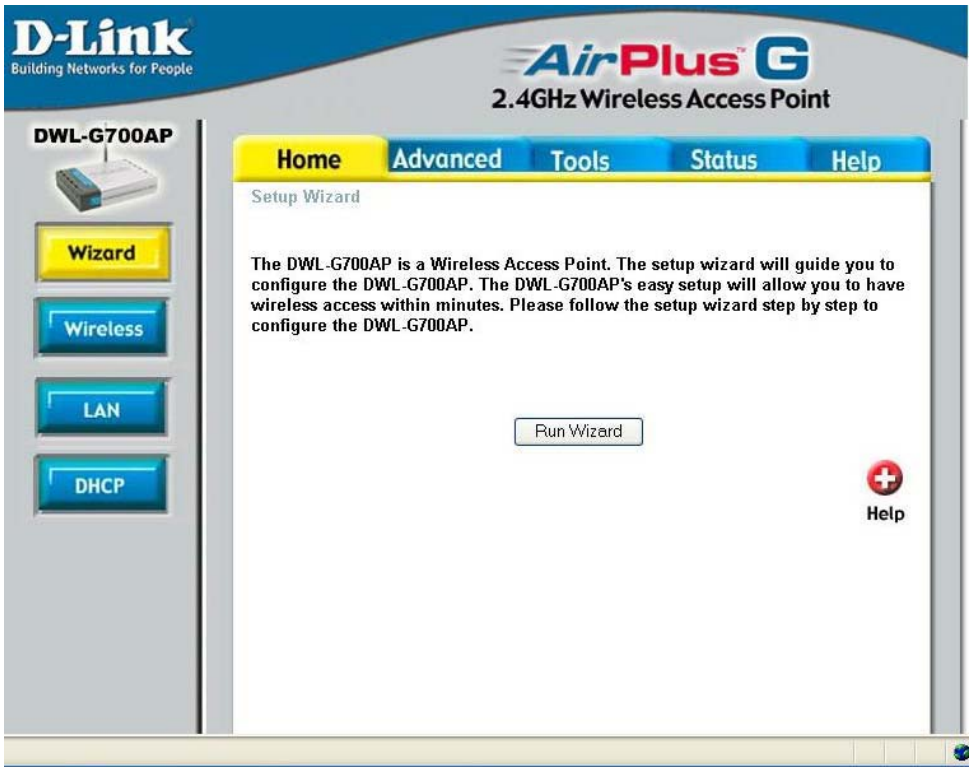
- Open the web browser
- Type in the **IP address** of the DWL-G700AP. (192.168.0.50).



Note: If you have changed the default IP address assigned to the DWL-G700AP, make sure to enter the correct IP address.

- Type **admin** in the **User Name** field
- Leave the **Password** blank
- Click **OK**

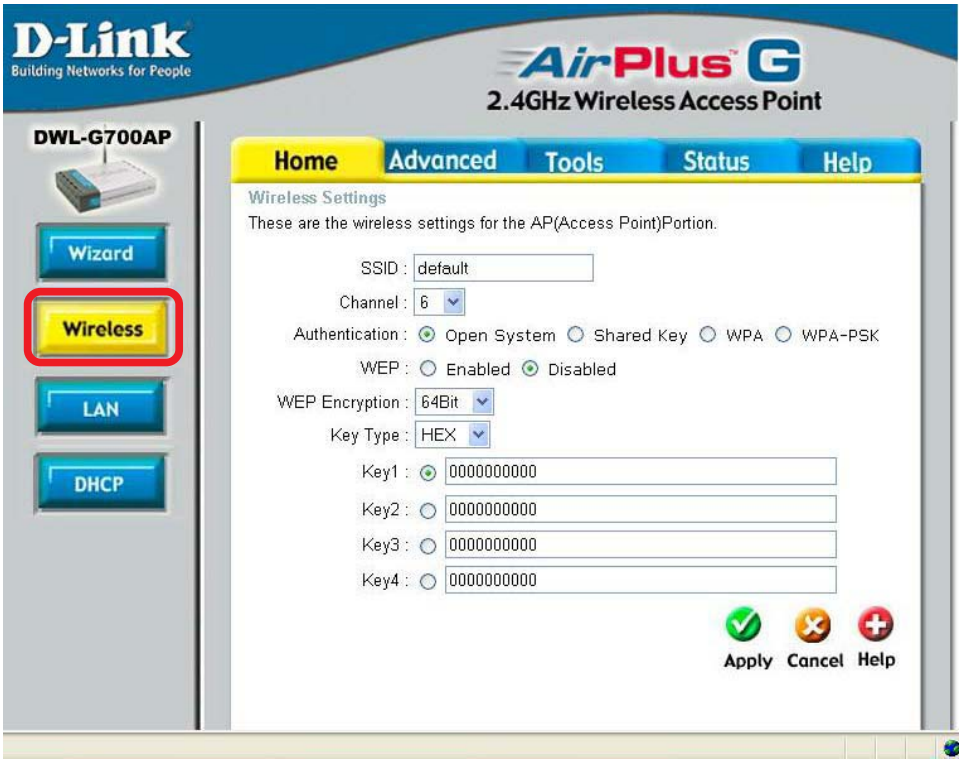
The **Home>Wizard** screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.



Home > Wireless

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



SSID: (Service Set Identifier) Default is the default setting. The SSID is a unique name that identifies a network. All devices on a network must share the same SSID name in order to communicate on the network. If you choose to change the SSID from the default setting, input your new SSID name in this field.

Channel: Channel **6** is the default channel. Input a new number if you want to change the default setting. All devices on the network must be set to the same channel to communicate on the network.

Authentication:

Select **Open System** to communicate the key across the network.

Select **Shared Key** to limit communication only to those devices that share the same WEP settings.

Select **WPA** to select *Wi-Fi Protected Access* in conjunction with a RADIUS server in your network

Select **WPA-PSK** to select *Wi-Fi Protected Access* without a RADIUS server.

WEP: Select **Enabled** or **Disabled.**

WEP Encryption: Select **64-bit** or **128-bit** WEP encryption.

Key Type: Select **Hexadecimal** or **ASCII** key type

Keys 1-4: Input up to four encryption keys. You will select one of these to be the active key.

Apply: Click **Apply** to apply the changes.

Using the Configuration Utility (continued)

Home > LAN

Dynamic IP Address: Select this option if you would like to have an IP Address automatically assigned to the DWL-G700AP by a DHCP server in your network.

DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses "automatically." With a DHCP Server there is no need to manually assign an IP Address.

Static IP Address: Select this option if you are manually assigning an IP Address.

IP Address: 192.168.0.50 is the default IP Address of the Access Point.

Subnet Mask: 255.255.255.0 is the default Subnet Mask. All devices on the network must have the same subnet mask to communicate on the network.

Gateway: Enter the IP Address of the router in your network

DNS Server: Enter the IP address of the DNS server. The DNS server translates domain names such as www.dlink.com into IP addresses.

IP Address

If you need to assign static IP addresses to the devices in your network, please remember that the IP address for each computer or device must be in the same IP address range as all the devices in the network. Each device must also have the same subnet mask. *For example: Assign the first computer an IP address of 192.168.0.2 and a subnet mask of 255.255.255.0, the second device an IP address of 192.168.0.3 and a subnet mask of 255.255.255.0, and so on.* ***Note: Devices that are assigned the same IP address may not be visible on the network.***

Using the Configuration Utility (continued)

Home > DHCP

DHCP Server: Select **Enabled** or **Disabled**. Disabled is the default setting. If you want to use the DWL-G700AP as a DHCP server, to automatically assign dynamic IP addresses on the network, you will select Enabled.

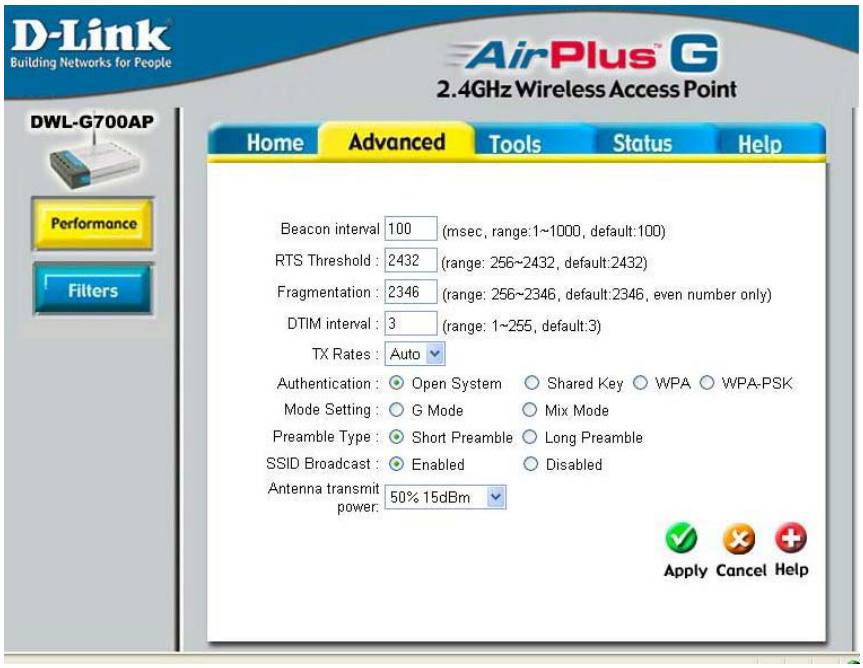
Starting IP Address: If you have enabled the DHCP server function, enter the starting point of the IP address range for your network.

Ending IP Address: Enter the ending IP address of your IP address range, if you have enabled the DHCP function of the DWL-G700AP.

Lease Time: Choose the length of time during which the DHCP function of the DWL-G700AP automatically regenerates the IP addresses to the devices in your network.

DHCP Client Table: Lists the devices on your network that are receiving dynamic IP addresses from the DWL-G700AP.

Advanced > Performance



Beacon Interval: Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. Default (100) is recommended.

RTS Threshold: This value should remain at its default setting of 2,432. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2,432 are recommended.

Fragmentation: This value should remain at its default setting of 2,346. If you experience a high packet error rate, you may slightly increase your fragmentation threshold within the value range of 256 to 2,346. Setting the fragmentation threshold too low may result in poor performance.

DTIM Interval (Beacon Rate): (Delivery Traffic Indication Message) Enter a value between 1 and 255 (default is 3) for the Delivery Traffic Indication Message (DTIM.) A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

TX Rates: Select the transmission rate for the network.

Authentication:
Open System - Communicates the key across the network.
Shared Key - Devices must have identical WEP settings to communicate.
WPA - WPA authentication in conjunction with a RADIUS server.
WPA-PSK - WPA authentication without a RADIUS server in the network.

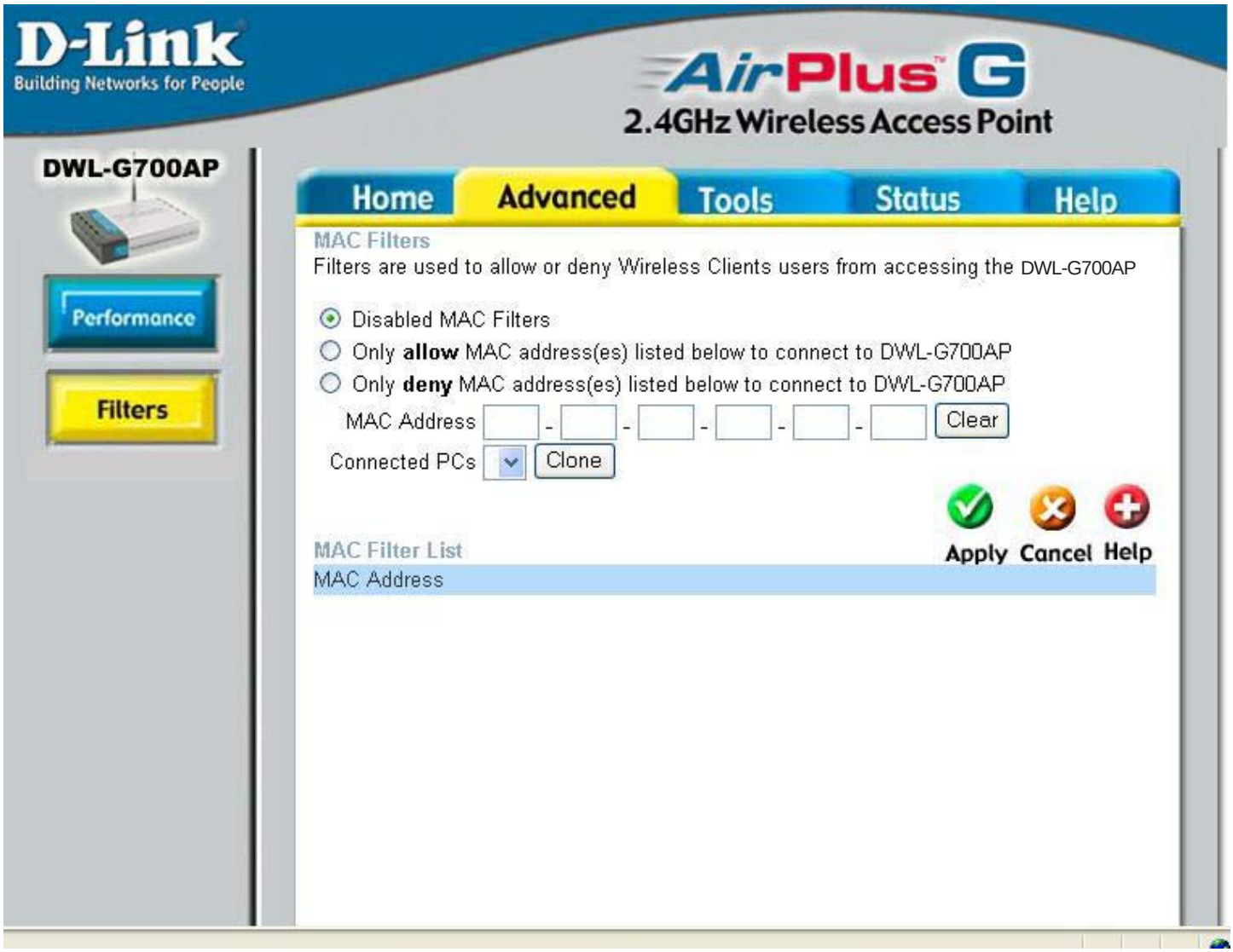
Mode Setting: For utmost speed, select **G Mode** to include only 802.11g devices in your network. Select **Mix Mode** to include 802.11g and 802.11b devices in your network.

Preamble: **Long Preamble** is the default setting. (High traffic networks should use the shorter preamble type.) The preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) used in communication between the access point and the wireless network adapters.

SSID Broadcast: (Service Set Identifier) Enable or Disable (default) the broadcast of the SSID name across the network. SSID is a name that identifies a wireless network. All devices on a network must use the same SSID to establish communication.

Antenna Transmit Power: Select the transmission power of the antenna. Limiting antenna power can be useful for security purposes.

Advanced > Filters



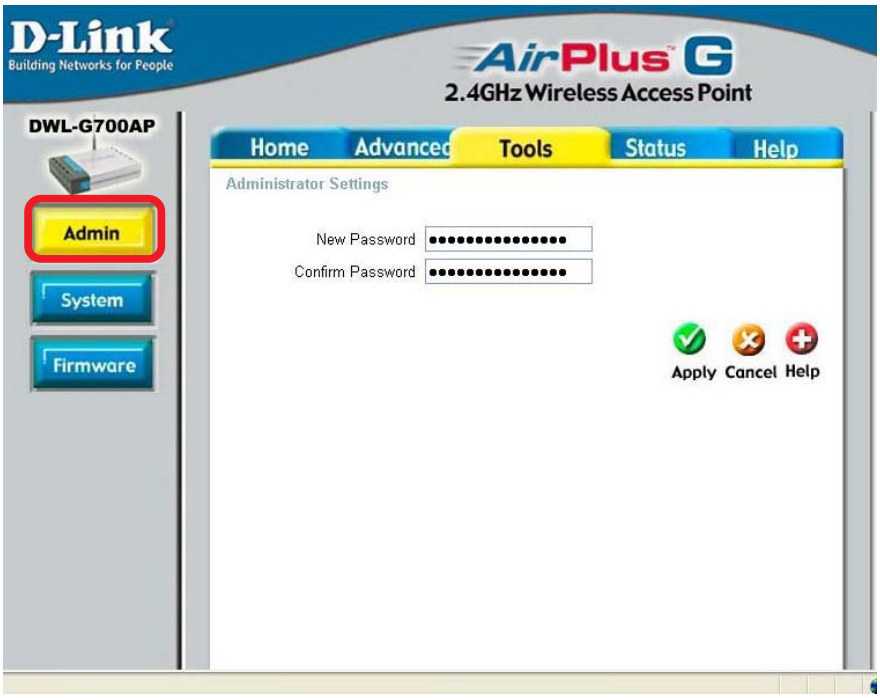
Use **MAC Filters** to allow or deny wireless clients, by their MAC addresses, from accessing the DWL-G700AP. You can manually add a MAC address or select the MAC address from the list of clients that are currently connected to the router (**Connected PCs**). The default setting is **Disabled MAC Filters**.

MAC Filter List: This list will display the MAC addresses that are in the selected filter.

Tools > Admin

New Password: Enter the new password.

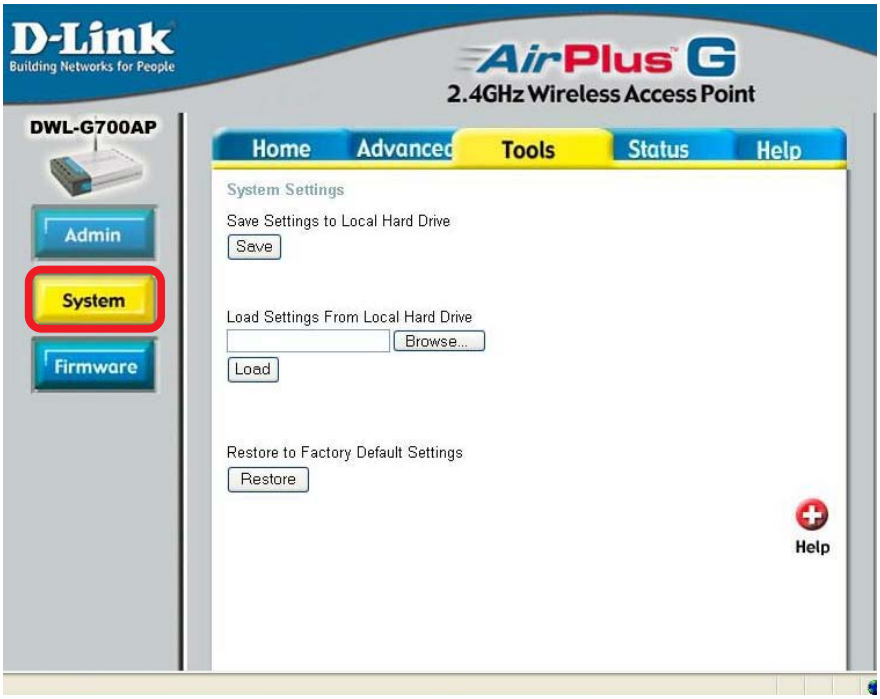
Confirm Password: Re-enter the password to confirm it.



Tools > System

Save Settings: The current system settings can be saved as a file onto the local hard drive.

Load Settings: The saved file or any other saved setting file can be loaded back on the access point. To reload a system settings file, click on **Browse** to browse the local hard drive and locate the system file to be used. Click **Load** when you have selected the file to be loaded back onto the access point.

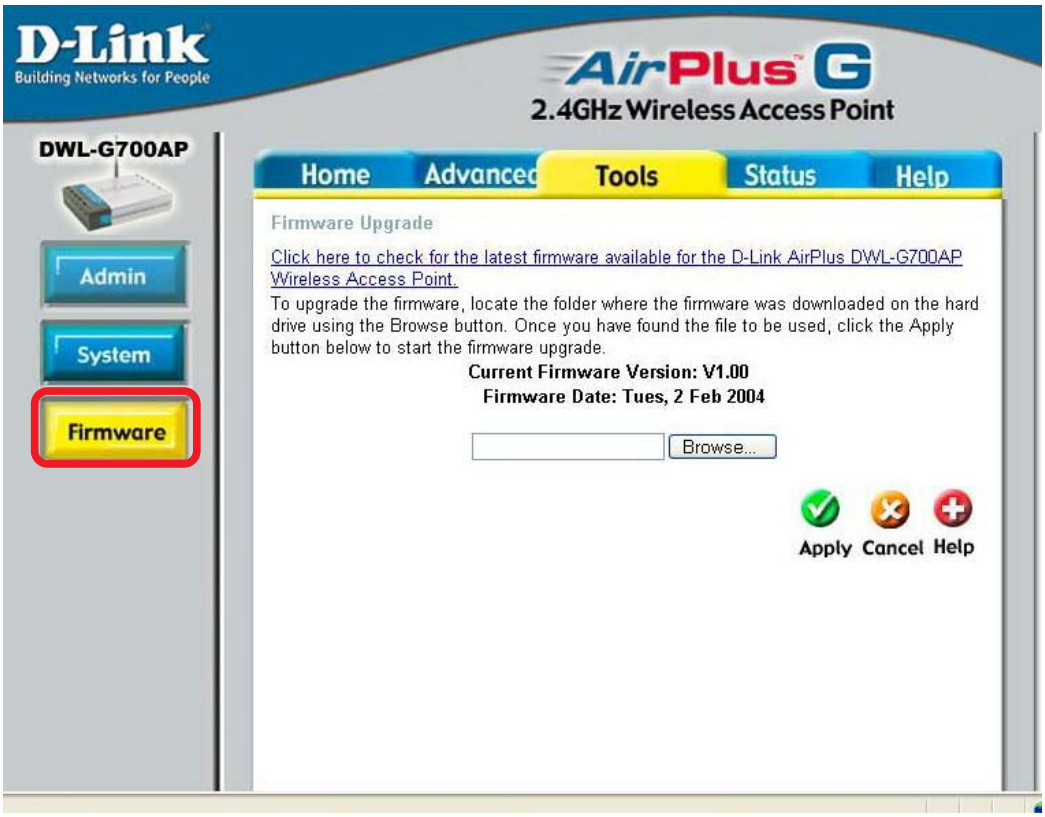


Restore: You may also reset the DWL-G700AP back to factory settings by clicking on **Restore**. Make sure to save the unit's settings before clicking on **Restore**. You will lose your current settings when you click **Restore**.

Using the Configuration Utility (continued)

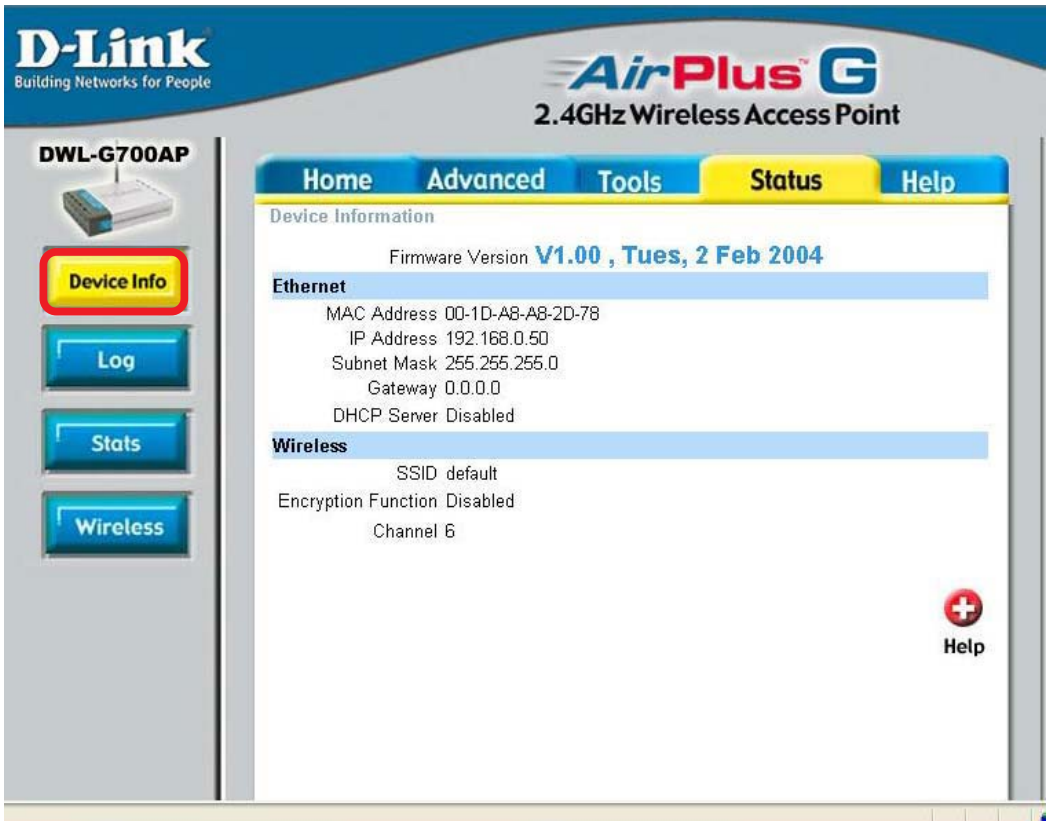
Tools > Firmware

You can upgrade the firmware of the DWL-G700AP at this page. When you click Click here to check... in this window you will be connnected to D-Link's website, where you can download the latest firmware update. After you have completed the firmware download to your hard drive, click **Browse** to browse your local hard drive and locate the firmware to be used for the update. Click **Apply**.



Status > Device Info

This screen displays the current firmware version, and the current wireless and Ethernet settings of the DWL-G700AP.



Using the Configuration Utility (continued)

Status > Log

View Log

The DWL-G700AP keeps a running log of events and activities occurring on the AP. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Setting.

First Page - The first page of the log.
Last Page - The last page of the log.
Previous - Moves back one log page.
Next - Moves forward one log page.
Clear - Clears the logs completely.
Log Settings - Brings up the page to configure the logs.

Log Settings

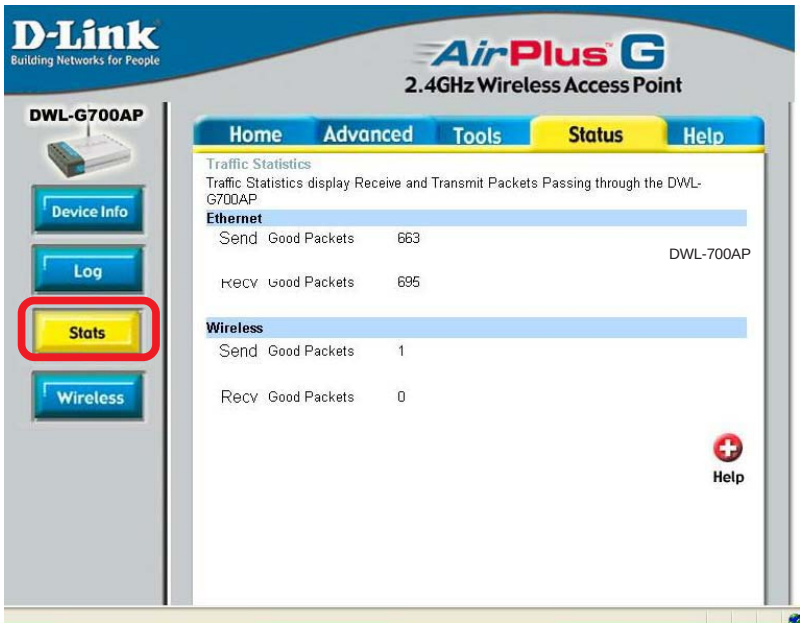
Not only does the DWL-G700AP display the logs of activities and events, it can be setup to send these logs to another location. The logs can be sent via email to an email account.

Using the Configuration Utility (continued)

Status> Stats

Traffic Statistics

The DWL-G700AP keeps statistics of traffic that passes through it. You are able to view the amount of packets that pass through the Ethernet and wireless portions of the network. The traffic counter will reset if the device is rebooted.



Status > Wireless

Connected Wireless PCs List

This list displays the MAC Addresses of connected PCs and the length of time that they have been connected.

Help

Menu

Select from this menu for extra help.

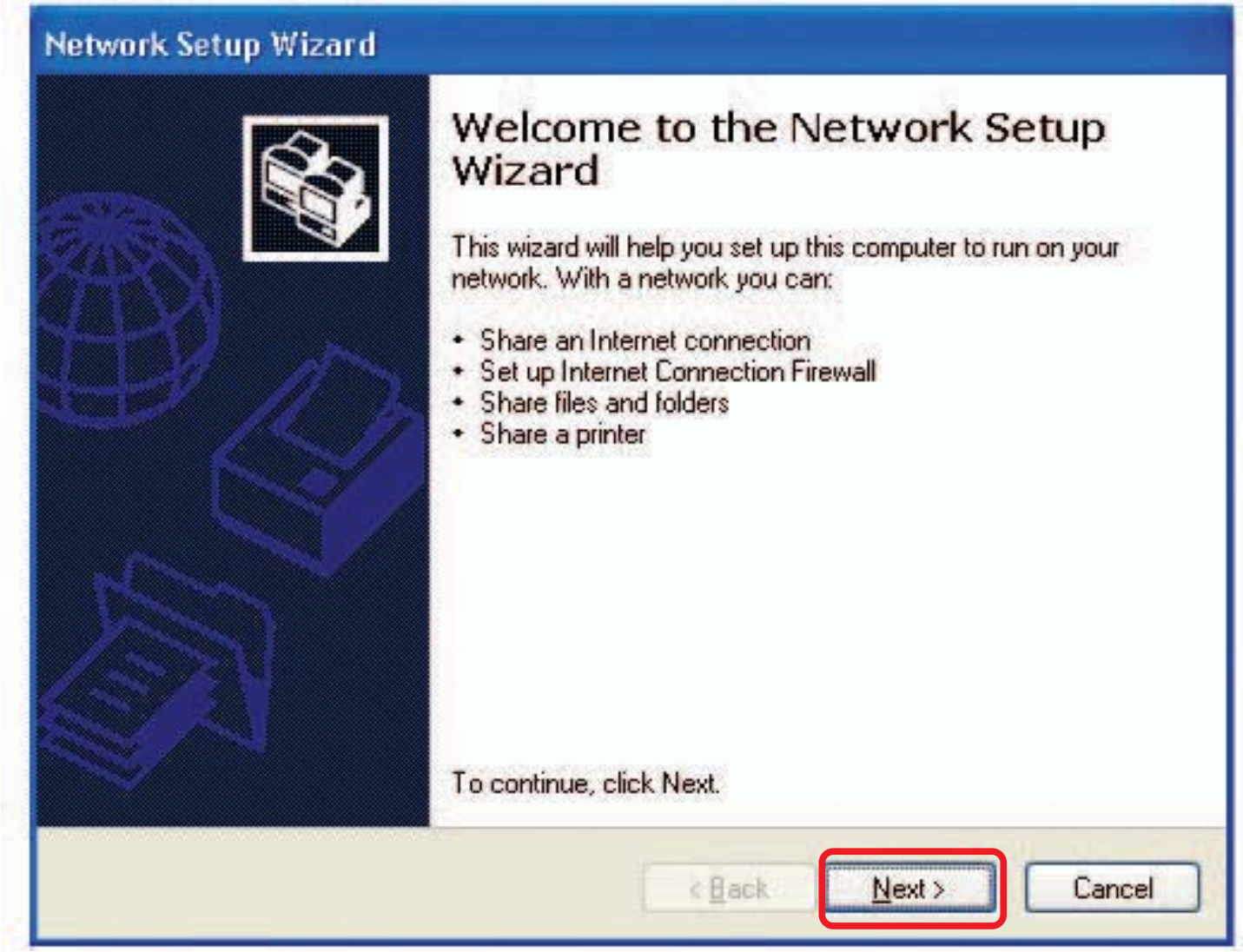
Networking Basics

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 or 98SE.

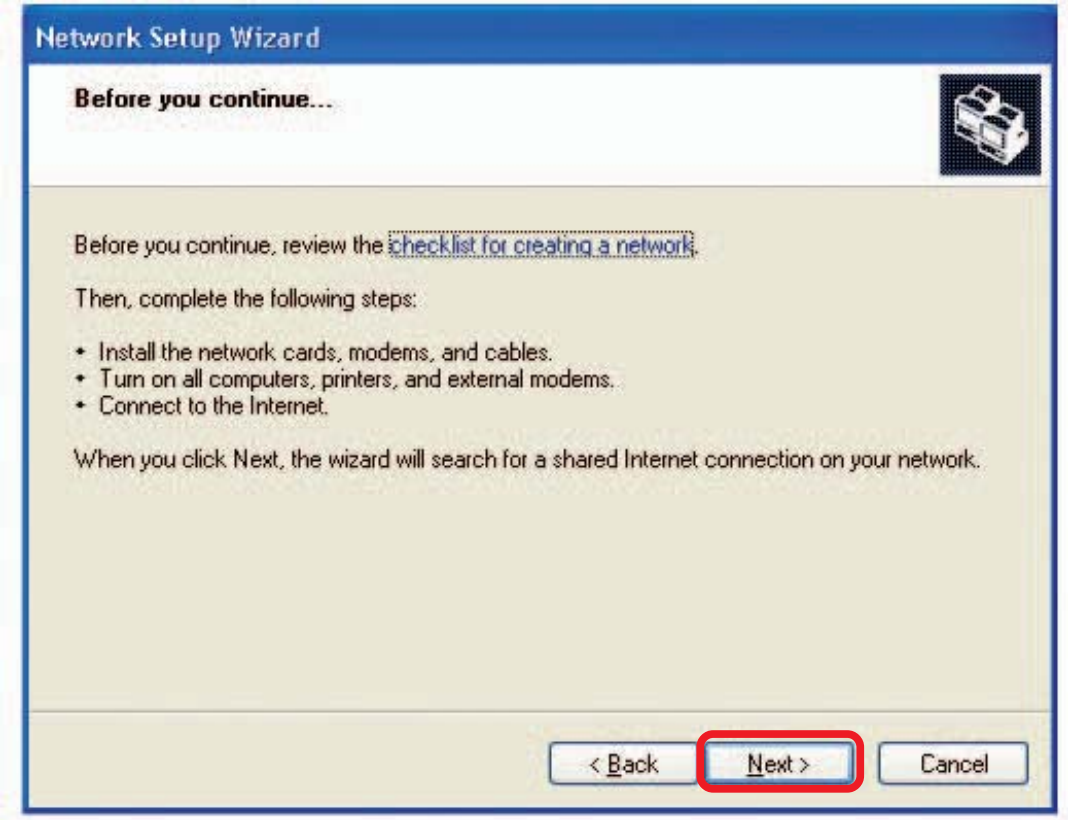
Go to **Start>Control Panel>Network Connections**
Select **Set up a home or small office network**



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

Networking Basics (continued)

Please follow all the instructions in this window:

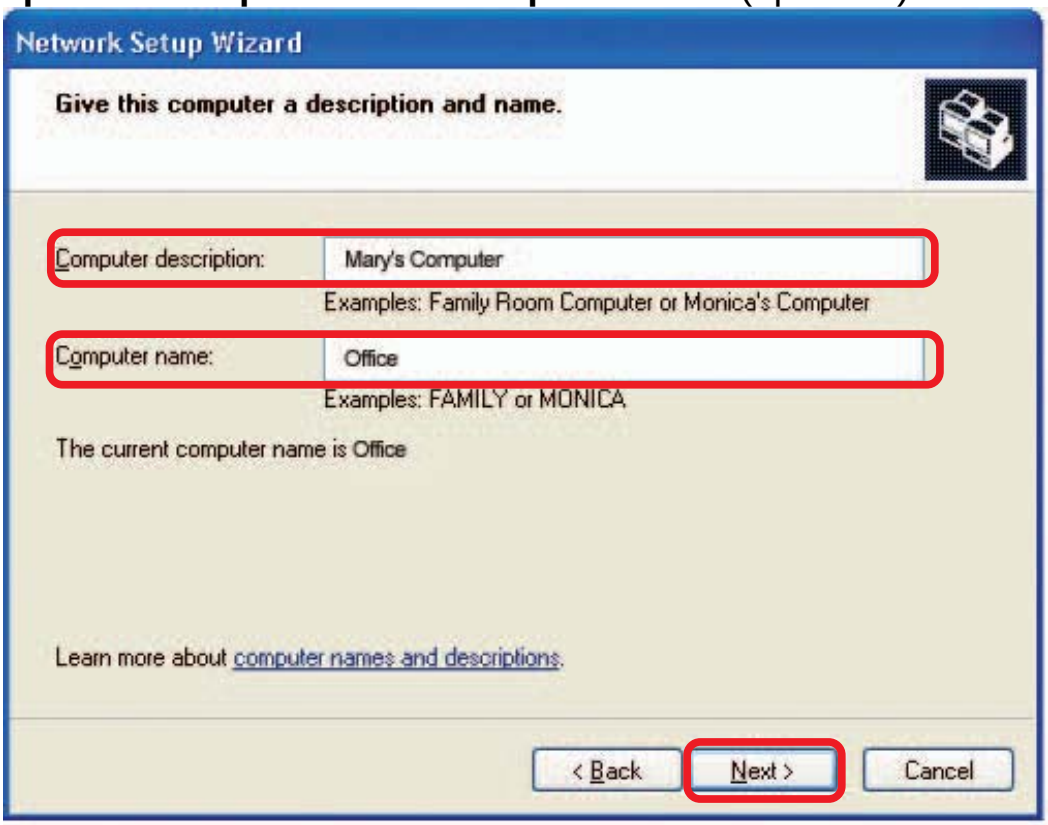


Click **Next.**

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

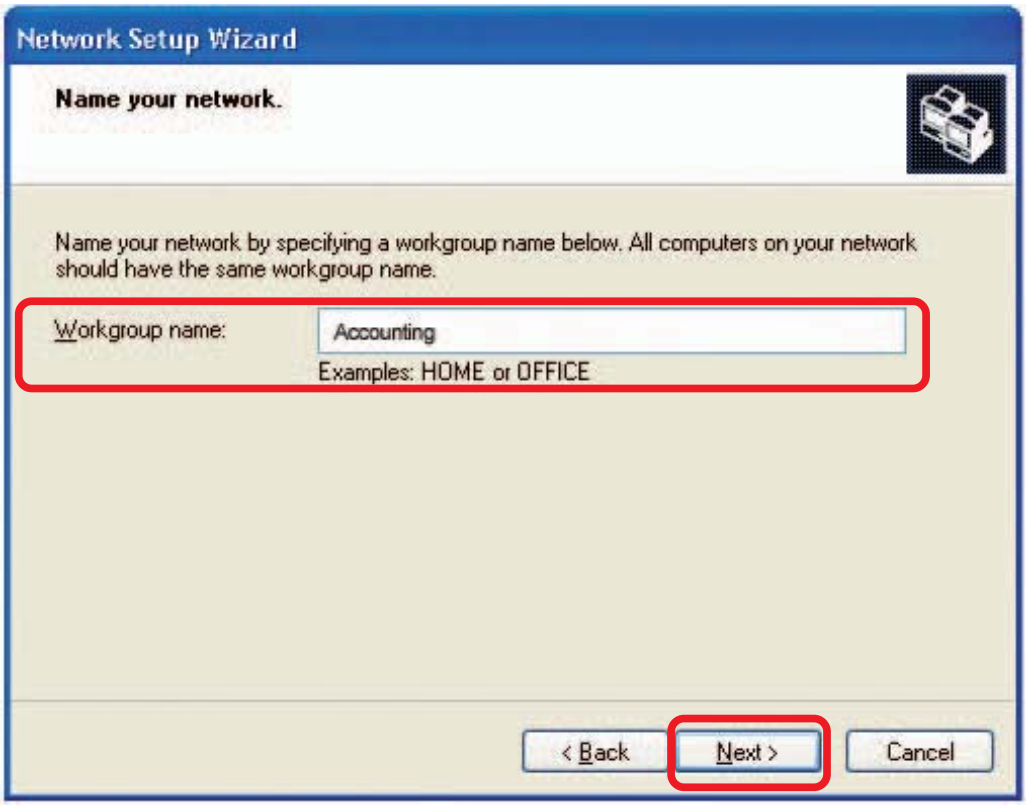
Click **Next.**

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



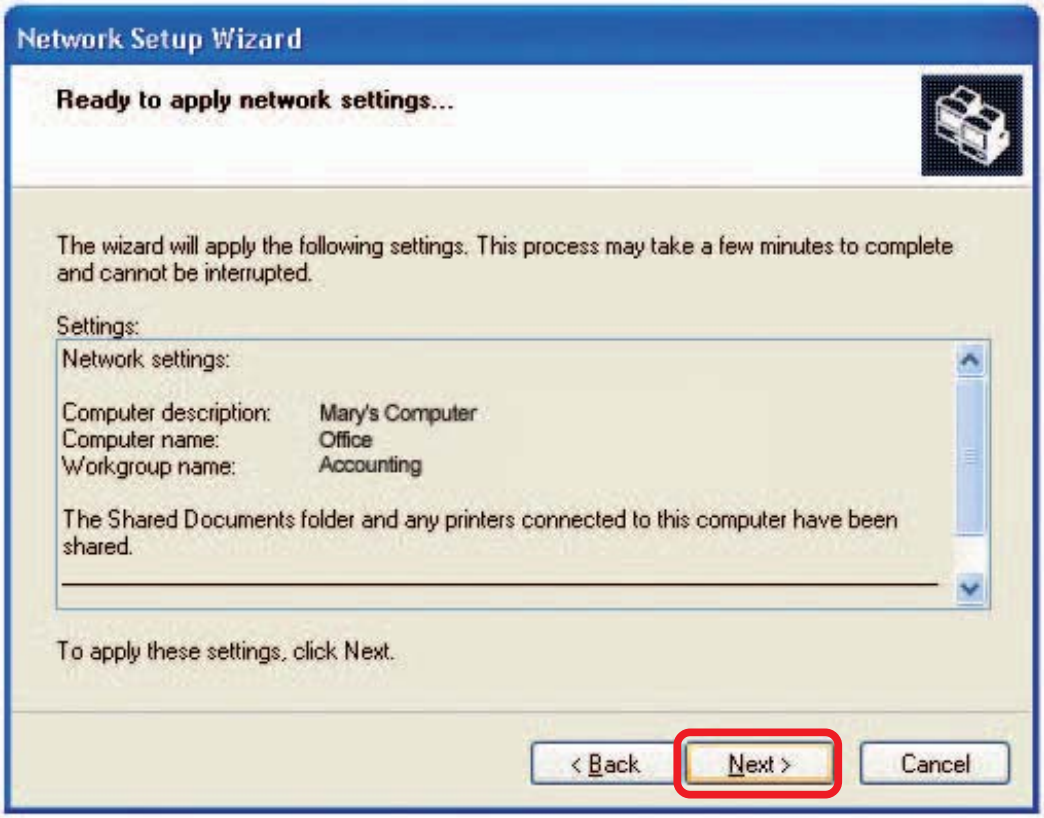
Click **Next.**

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



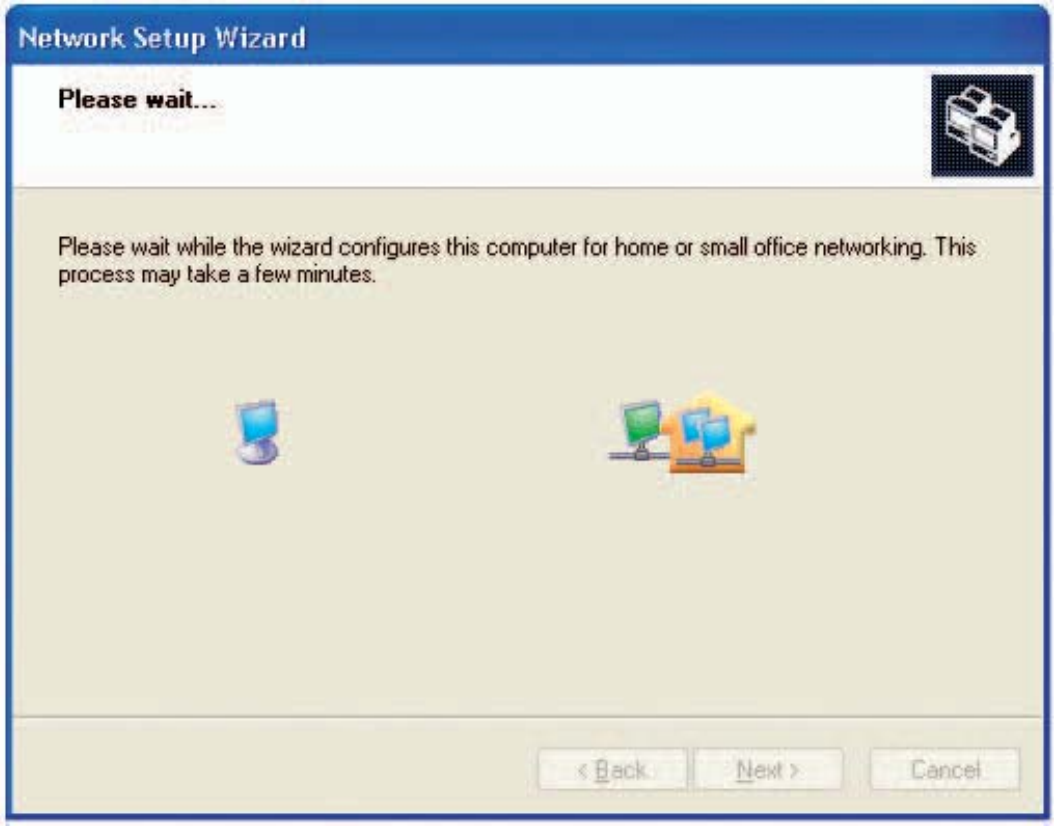
Click **Next.**

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



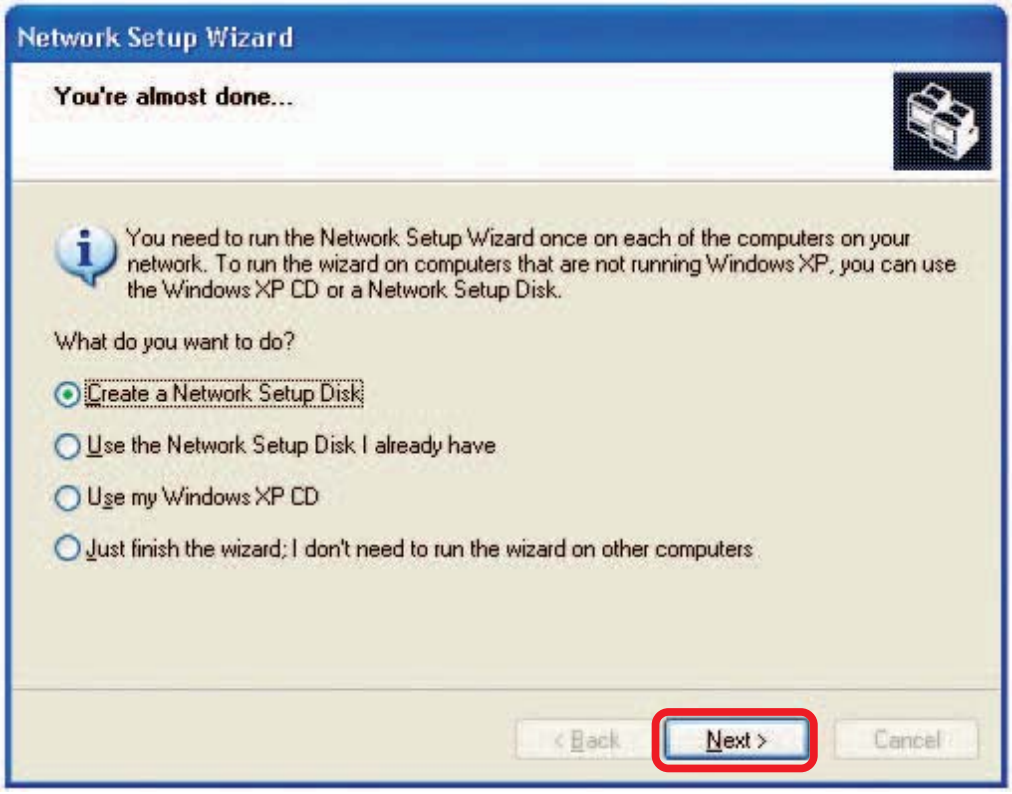
When the changes are complete, click **Next**.

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

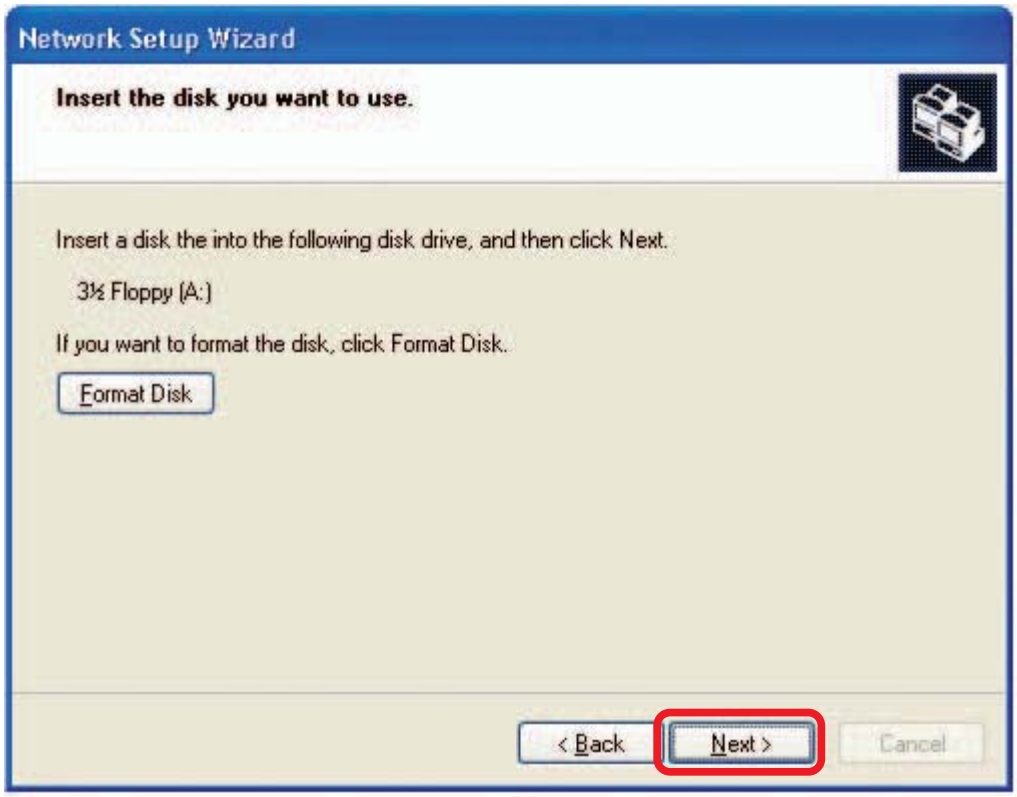


Networking Basics (continued)

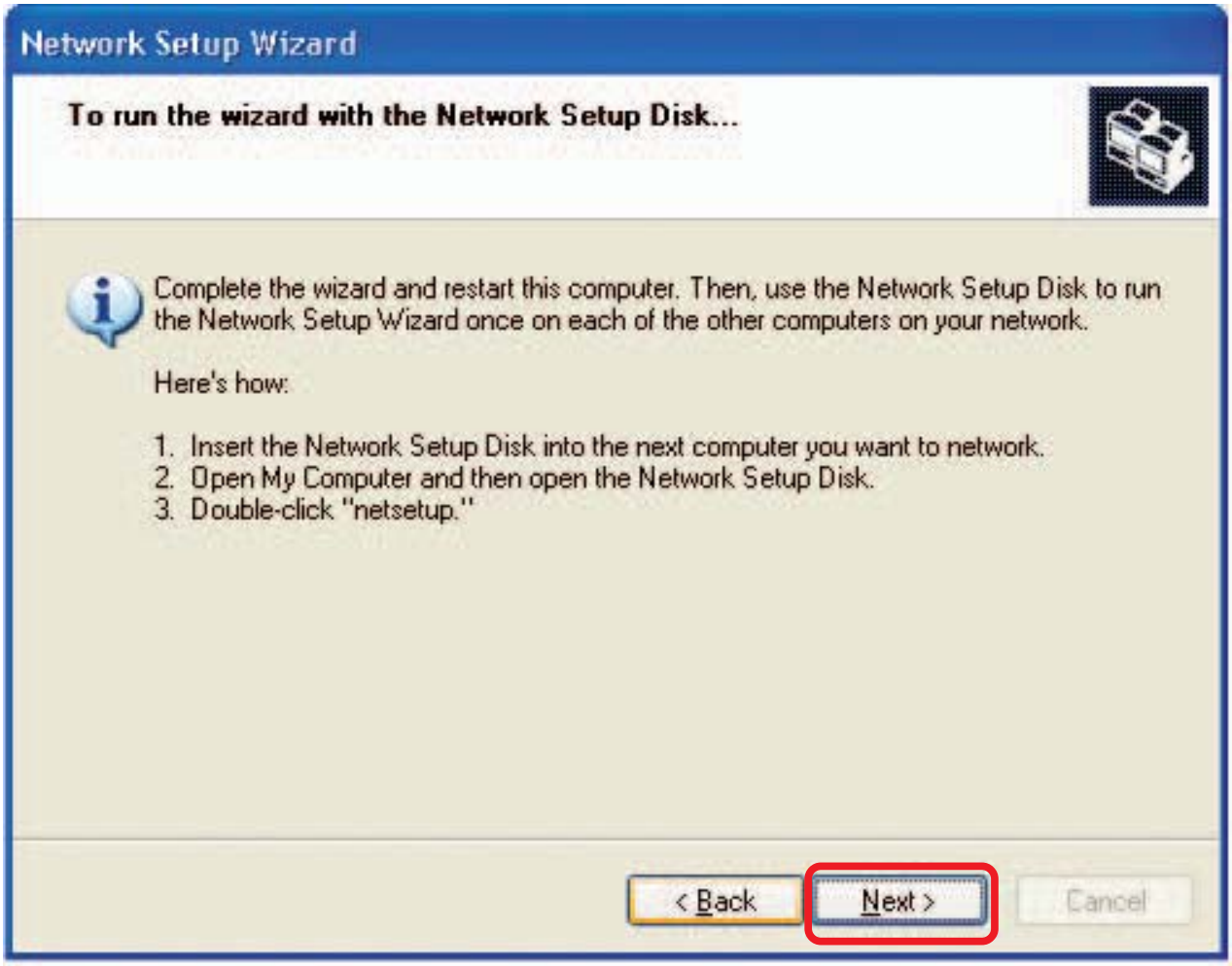
In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.



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

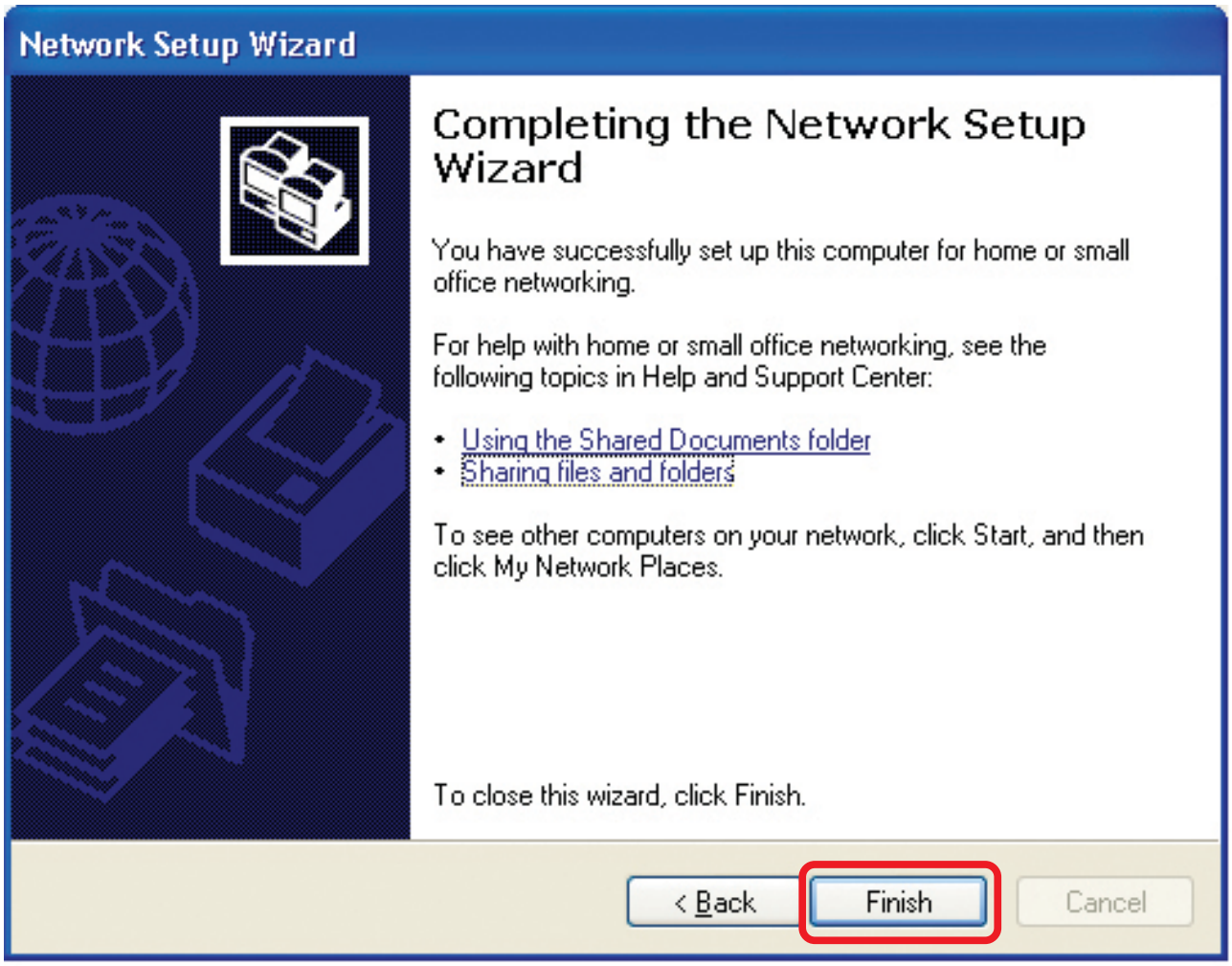


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next.**



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.