

# **D-Link *AirPlus* DWL-900AP+**

## **2.4 GHz Wireless Access Point**

### **Manual**

*Rev. 071002*

**D-Link**  
Building Networks for People

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# 1. Package Contents



## Contents of Package:

- **D-Link AirPlus DWL-900AP+** Enhanced 2.4GHz Wireless Access Point
- Power Supply – 5V DC, 2.0A
- Manual on CD
- Quick Installation Guide
- Ethernet Cable

*Note: Using a power supply with a different voltage rating than the one included with the DWL-900AP+ will cause damage and void the warranty for this product.*

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

## System Requirements:

- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter
- Internet Explorer or Netscape Navigator version 4.0 or above, with JavaScript enabled

## 2. Introduction

The D-Link *AirPlus* DWL-900AP+ Wireless Access Point is an enhanced 802.11b high-performance wireless access point. It is an ideal way to extend the reach and number of computers connected to your wireless network.

Unlike most 802.11b access points, the DWL-900AP+ is capable of data transfer speeds of up to 22 Mbps (compared to the standard 11 Mbps) when used with other D-Link *AirPlus* products such as the DWL-520+ Wireless PCI Adapter.

After completing the steps outlined in the *Quick Installation Guide* (included in your package) you will have the ability to share information and resources, such as files and printers, and enjoy the freedom that wireless networking delivers.

The DWL-900AP+ is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a large network. This Manual is designed to help you connect the Access Point and the D-Link *AirPlus* 2.4GHz Wireless Adapters into a network in Infrastructure mode. *Please take a look at the **Getting Started** section in this manual to see an example of an Infrastructure network using the DWL-900AP+.*

This manual provides a quick introduction to wireless technology and its application as it relates to networking. Please take a moment to read through this manual and get acquainted with wireless technology.

### Connections



# Features & Benefits

- Up to 2X Faster with *AirPlus* Products - high-speed wireless data transfer rates up to 22Mbps. With twice the data rate and capacity, the DWL-900AP+ 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
- Improved Performance – Up to 20% faster data transfer rates on standard 802.11b networks
- Stronger Network Security with 256-bit WEP Encryption – Supports 64/128/256-bit WEP encryption for higher level of security for your data and wireless communication than encryption found in existing 802.11b products
- Built-in DHCP Server – If enabled, it will automatically assign IP addresses to wireless clients in a temporary network.
- Web-based interface for Managing and Configuring – Easy-to-use interface independent of the operating system
- 4 Different Operation Modes – Capable of operating in one of four different operation modes to meet your wireless networking requirements: Access Point, AP-to-AP Bridging, AP-to-Multipoint Bridging, and Wireless Client.

## LEDS

**LED** stands for **L**ight-**E**mitting **D**iode. The **DWL-900AP+ Wireless Access Point** has 3 LEDs as shown below:



**Power:** solid green light indicates connection

**LAN:** blinking green light indicates activity; solid green light indicates connection

**WLAN:** blinking green light indicates wireless activity; solid green light indicates connection

### 3. Wireless Basics

D-Link *AirPlus* 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. Strictly adhering to the IEEE standard, the D-Link *AirPlus* wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs 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.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Access Point (AP) is a device used to provide this link.

People use wireless LAN 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 (Wireless Local Area Networks) are easy to set up, manage, change and relocate. Networks that frequently change, both physically and logically, can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

**Installation Speed and Simplicity** - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

## Wireless Basics

**Network Expansion** - Wireless technology allows the network to go where wires cannot go.

**Reduced Cost-of-Ownership** - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

**Scalability** – Wireless Local Area Networks (WLANs) can be configured in a variety of topologies 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 full infrastructure networks of thousands of users that allow roaming over a broad area.

***D-Link AirPlus** Wireless Family of LAN products include:*

- ◆ Enhanced 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650+)
- ◆ Enhanced 2.4GHz Wireless PCI cards used with desktop computers (DWL-520+)
- ◆ Enhanced 2.4GHz Wireless Access Points (DWL-900AP+)
- ◆ Enhanced 2.4GHz Wireless Broadband Router (DI-614+)

*The DWL-900AP+ will also work with **D-Link Air** 802.11b wireless adapters, which include:*

- ◆ 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650)
- ◆ 2.4GHz Wireless PCI cards used with desktop computers (DWL-520)

## Standards - Based Technology

The IEEE standard-based technology assures that the D-Link *AirPlus* Products are interoperable with existing compatible 2.4GHz wireless technology. This means you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. The technology works by using multiple frequencies in the 2.4GHz range at speeds up to 22 Mbps. D-Link *AirPlus* products will automatically



sense the best possible connection speed to ensure optimal network performance.

### **Installation Considerations**

Designed to go up to 1,312 feet (400 meters) outdoors and up to 328 feet (100 meters) indoors, D-Link's *AirPlus* DWL-900AP+ lets you access your network using a wireless connection from virtually anywhere. 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 wireless Access Point and your receiving device (e.g., the DWL-650+) to a minimum - Each wall or ceiling can reduce your D-Link *AirPlus* Wireless product's range from 3-90 feet (1-30 meters.) Position your Access Points, Residential Gateways, and computers so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between Access Points, Residential Gateways (routers) and computers. 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! Try to make sure that the Access Points and adapters are positioned so that the signal will travel straight through a wall or ceiling for better reception.
3. Building Materials make a difference - A solid metal door or aluminum studs may have a negative effect on range. Try to position Access Points, and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
4. Make sure that the device's antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that may generate extreme RF noise.

For the average home, signal range should not be an issue. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the computers with wireless adapters. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

## 4. Getting Started

**Right out of the box, with its default settings, the DWL-900AP+ will automatically connect with other D-Link Air or AirPlus products.**

For the price of a single IP Address from your Broadband Internet Service provider you can share the Internet with all the computers on your local network, without sacrificing speed or security, using D-Link AirPlus networking products.

### IP ADDRESS

*Please note: If you have a DHCP-capable router, such as the D-Link DI-604 or DI-614+, there is no need to assign an IP Address.*

If you need to assign 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.**

An **Infrastructure** network contains an Access Point. The **Infrastructure Network** example shown on the next page contains the following D-Link network devices:

A wireless Access Point - **D-Link AirPlus DWL-900AP+**

An Ethernet Broadband Router - **D-Link DI-604**

A laptop computer with a wireless adapter - **D-Link AirPlus DWL-650+**

A desktop computer with a wireless adapter - **D-Link AirPlus DWL-520+**

A Cable modem - **D-Link DCM-200**

***DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses "automatically." With a DHCP-capable gateway/router, there is no need to manually assign an IP address.***

## Getting Started

### Setting Up an Infrastructure Network

Please refer to the following sections of this manual for additional information about setting up a network:

**Networking Basics-** learn how to check your IP Address; share printers and files.

**Using the Configuration Utility-** learn the settings you must use on each computer in your network for successful communication.

**Troubleshooting-** learn how to check for the proper installation of the network adapters' drivers and other tips for troubleshooting the network.



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

- 1** You will need a broadband Internet access (Cable/DSL) subscription.
- 2** Consult with your Cable/DSL provider for proper installation of the modem.
- 3** Connect the modem to an Ethernet Broadband Router (such as the **D-Link DI-604**) See the **Quick Installation Guide** included with the DI-604.
- 4** Connect the router to the **D-Link AirPlus DWL-900AP+**. Refer to the **Quick Installation Guide** for setting up the DWL-900AP+.
- 5** If you are connecting a desktop computer in your network, you can install the **D-Link AirPlus DWL-520+** wireless PCI adapter into an available PCI slot. See the **Quick Installation Guide** included with the DWL-520+.
- 6** Install the drivers for the wireless cardbus adapter (**D-Link AirPlus DWL-650+**) into the laptop computer. See the **Quick Installation Guide** included with the DWL-650+ for installation instructions.

## 5. Using the Configuration Menu

The **Configuration Menu** for the DWL-900AP+ is web-based. When using the configuration program, please consider the following:

*You will need a JavaScript-enabled web-browser such as Internet Explorer 4.0 or higher, or Netscape Navigator 4.0 or higher.*

**The computer that you are using for initial configuration must have an IP Address within the same range as the IP Address of the DWL-900AP+. The DWL-900AP+ has a default IP Address of 192.168.0.50 with subnet mask of 255.255.255.0**

*If you **are** using a D-Link router in your network, such as the DI-604, with the factory default settings, you **will not** need to assign a static IP Address to the computer that you are using to configure the Access Point. (Skip to Fig. 5.1: entering the IP address)*

*If you **are not** using a D-Link router in your network, you **will** need to assign a Static IP Address to the computer that you are using to configure the DWL-900AP+, within the IP Address Range of the DWL-900AP+. Assign a static IP address of **192.168.0.2** with subnet mask of **255.255.255.0** (Please see Networking Basics in this manual for information on Assigning a Static IP Address.)*

**Note:** *Please write down the current IP address settings of the computer. You may need to revert back to these settings after configuring the DWL-900AP+.*

*After you have assigned a Static IP Address to the computer you are using for configuration (if necessary), next you will assign the **DWL-900AP+** an IP Address within the range of your existing network.*

*After changing the DWL-900AP+'s IP Address, you must revert back to the original IP address in order to regain connection to the DWL-900AP+.*

- *If the computer had a static IP address, re-input that same address.*
- *If the computer had a dynamic IP Address (i.e., a DHCP capable router automatically assigns the IP Address) then change the setting of your network adapter to receive a Dynamic IP Address.*

### Factory Default Settings for the DWL-900AP+

SSID	default
Channel	6
Encryption	disabled
User Name	admin
Password	(no password, leave field blank)
IP Address	192.168.0.50

## Using the Configuration Menu

Whenever you want to configure your network or the DWL-900AP+, you can access the Configuration Utility by opening the web-browser and typing in the IP Address of the DWL-900AP+. The DWL-900AP+'s default IP Address is shown below:

- Open the web browser
- Type in the **IP Address** of the Access Point

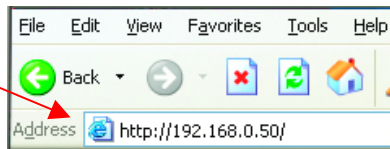


Fig. 5.1

*(The IP Address shown in the example above is the default setting. Use this IP address when connecting to a network consisting of other D-Link devices set to their default settings. If you have changed the IP Address of the DWL-900AP+ to conform to a network other than one with D-Link devices, then input that IP Address in the web browser, instead of the default IP Address shown.)*

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



Fig. 5.2

## Home > Wireless

The Configuration window will appear. You can select from several options in this window. Here the **Home > Wireless** tab is displayed. If you wish to change the default settings, you can make changes to the following items:

- **AP name**
- **SSID**
- **Channel**
- **WEP Encryption**
- **Key Type**

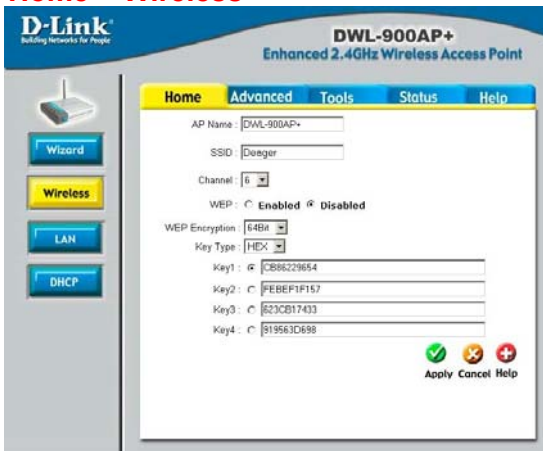


Fig. 5.3

## Using the Configuration Menu

**AP Name:** You may choose to rename your Access Point, especially if you have more than one Access Point on your network.

**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. The SSID can be up to 32 characters in length.

**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.

**WEP Encryption:** Select **Enable Encryption** to use **WEP (Wired Equivalent Privacy)** on the network. All devices on the network, and the Access Point, must share the same WEP selection – either **Enable** or **Disable**, and they must share the same WEP key. The WEP key is generated from **ASCII** or **Hexadecimal** entries that are either 64, 128, or 256 bit in length. When enabling encryption, select the **Key Type** (ASCII or Hexadecimal) and then input the appropriate digits or letters. You can create up to 4 keys. Select the key you wish to use.

**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

Click **Help** at any time for more information.

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

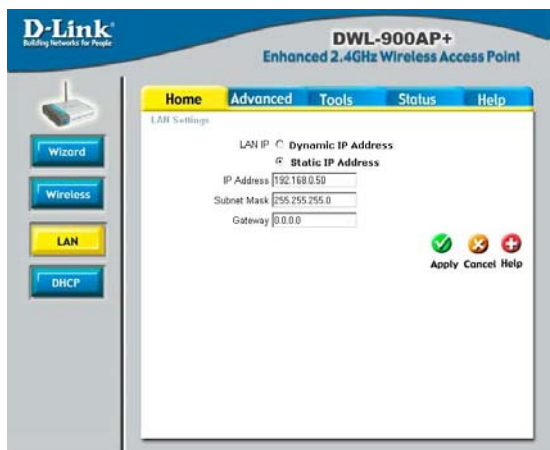
This window displays the default settings of the DWL-900AP+.

The default IP Address is

192.168.0.50. If you select

**Dynamic IP Address**, you will obtain a dynamic IP Address from a DHCP server on your network. (This is not advisable since it will be difficult to determine the dynamic IP address assigned to the DWL-900AP+.) The **Subnet Mask** is 255.255.255.0. Input the IP Address of the **Gateway** (the router on your network.)

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



## Using the Configuration Menu

The illustration at right shows the recommended default setting (**Disabled**) for the **DHCP Server** function of the DWL-900AP+. If you wish to use the DWL-900AP+ as a DHCP server (*not recommended if you already have a DHCP enabled router/gateway on your network*) then select **Enabled**. Enter the IP Address range and click **Apply**, if you have made any changes.

### Home > DHCP

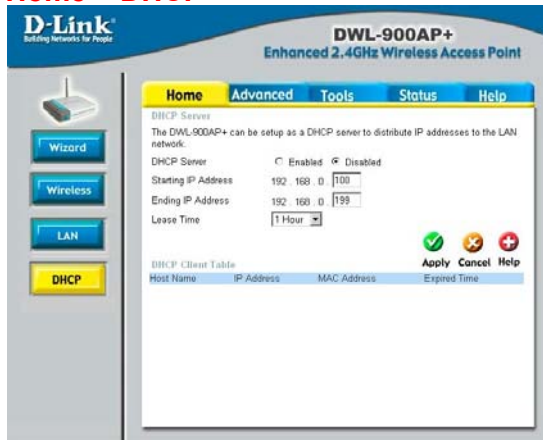


Fig. 5.5

### Advanced > Mode

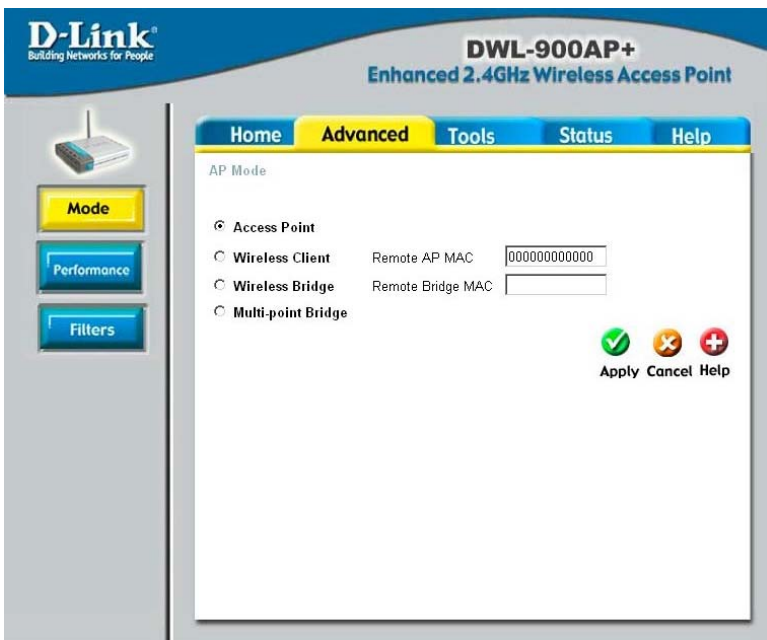


Fig. 5.6

The DWL-900AP+ can be operated in 4 different modes to meet your networking needs. The default setting is **Access Point** mode.

**Note:** If you select to use the DWL-900AP+ in Wireless Client mode, you will need to input the Wireless MAC Address of the Access Point you wish to associate with.

**The Wireless Bridge and Multi-point Bridge mode are proprietary modes that will require DWL-900AP+'s for both locations.** If you select to use the DWL-900AP+ in **Wireless Bridge** mode, you will need to input the Ethernet MAC Address of the remote DWL-900AP+ rather than the Wireless MAC address.



## Using the Configuration Menu **Advanced > Performance**

The default Performance settings are shown here.

**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 16384 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.

**Transmission Rate:** Select the transmission rate for the 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 roaming wireless Network adapters.

**Authentication:**

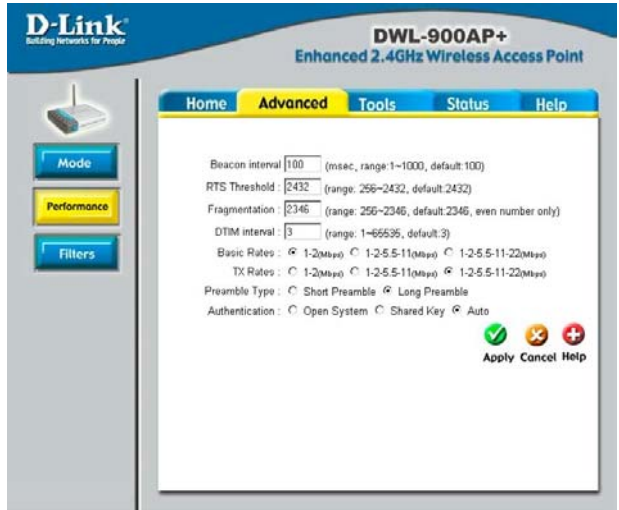
**Open System** – communicates the key across the network

**Shared Key** – devices must have identical WEP settings to communicate

**Auto** – automatically adjusts to the Authentication mode of the wireless client

**Antenna Type:** Select **Left**, **Right** or both (**Diversity**) antenna

**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.





## Using the Configuration Menu Advanced > Filters

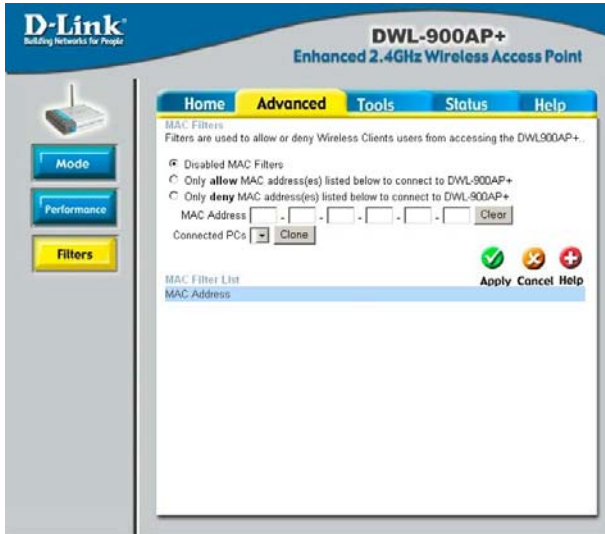


Fig. 5.8

### Use MAC Filters to allow or deny wireless connection to the DWL-900AP+.

Select **Disable MAC Filters** (default) to disable this feature. Select **Only allow the MAC address...** or **Only deny the MAC address...** and enter the MAC Address of the selected computer into the field above. Or you can click on the pull-down arrow next to the **Connected PCs** field, select the computer from the list, and click **Clone**. The MAC address you have chosen will appear in the **MAC Filter List**. Click **Apply** to save your choices.

## Tools > Admin



Fig. 5.9

Change your password in this window. It can be up to 14 characters in length. Please keep a copy of your password in a safe place.

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

## Using the Configuration Menu

### Tools > System

The current system settings can be saved as a file onto the local hard drive by clicking **Save**. The saved file can be loaded back on the DWL-900AP+ by clicking **Browse**. When you have selected the settings file, click **Load**. Click **Restore** to return to **Factory Default Settings**.

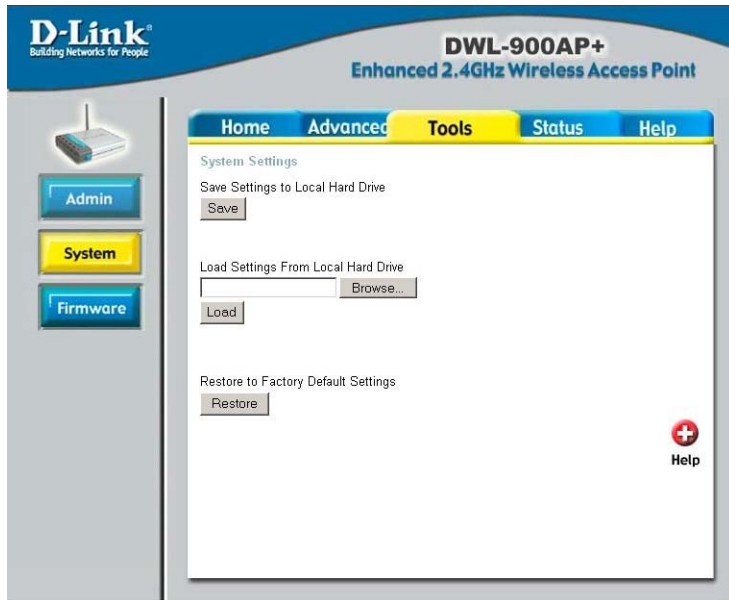


Fig. 5.10

### Tools > Firmware

Upgrade the firmware for the Access Point. Click on the link to find upgrades to the firmware on the D-Link website at <http://support.dlink.com>. After you have downloaded a firmware upgrade to your local drive, click **Browse**. Select the firmware and click **Apply** to complete the upgrade.

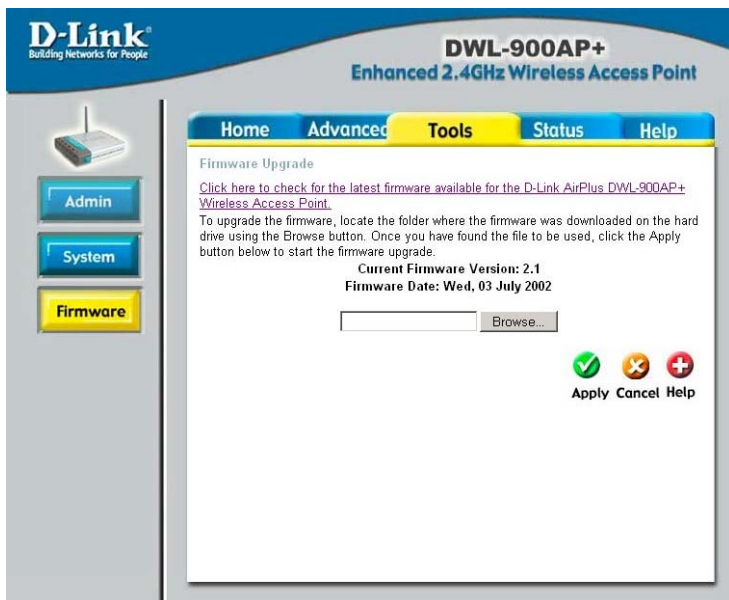


Fig. 5.11

## Using the Configuration Menu

This page displays the current information for the DWL-900AP+. It will display the **Ethernet** and **Wireless** information.

### Ethernet:

- MAC Address
- IP Address
- Subnet Mask
- Gateway
- DHCP Server

### Wireless:

- MAC Address
- SSID
- Encryption
- Channel
- AP mode

## Status > Device Info

The screenshot shows the D-Link configuration interface for the DWL-900AP+ Enhanced 2.4GHz Wireless Access Point. The 'Status' tab is selected, and the 'Device Information' section is active. The interface includes a navigation menu on the left with buttons for 'Device Info', 'Log', 'Stats', and 'Wireless'. The main content area displays the following information:

Device Information  
Firmware Version 2.1 , Wed. 03 July 2002

**Ethernet**  
MAC Address 00-40-05-B1-18-8D  
IP Address 192.168.0.50  
Subnet Mask 255.255.255.0  
Gateway 0.0.0.0  
DHCP Server Disabled

**Wireless**  
MAC Address 00-05-5D-5B-04-12  
SSID default  
Encryption Function Disabled  
Channel 6  
AP mode Access Point

A 'Help' button with a red plus icon is located in the bottom right corner of the main content area.

Fig. 5.12

## Status > Log

The DWL-900AP+ keeps a running log of events and activities occurring on the Access Point. If the device is rebooted, the logs are automatically cleared. You may save the log files under **Log Settings**.

To enable or disable logging for the Access Point, click on **Log Settings**. To monitor the wireless stations, select **Enable** and the log file will be sent to the associated computer.

The screenshot shows the D-Link configuration interface for the DWL-900AP+ Enhanced 2.4GHz Wireless Access Point. The 'Status' tab is selected, and the 'Log' section is active. The interface includes a navigation menu on the left with buttons for 'Device Info', 'Log', 'Stats', and 'Wireless'. The main content area displays the following information:

View Log  
First Page | Last Page | Previous | Next | Clear | Log Settings | Help

page 1 of 1

Time	Message
Jul/08/2002 16:05:12	System started
Jul/08/2002 16:05:12	AP mode start. Channel=6 SSID=default

A 'Help' button with a red plus icon is located in the bottom right corner of the main content area.

Fig. 5.13

**First Page** - displays the first page of the Log

**Last Page** - displays the last page of the Log

**Previous** - moves back one log page

**Next** - moves forward one log page

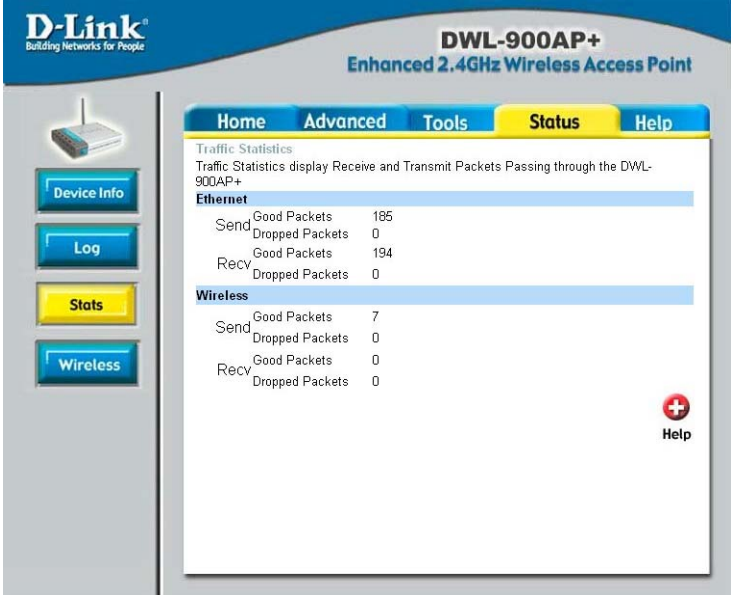
**Clear** - clears the log completely

**Log Settings** – Brings up the page to configure the logs

## Using the Configuration Menu

Displays the network traffic statistics for both received and transmitted communications through the Ethernet port and wireless connections associated with the Access Point.

### Status > Stats



The screenshot shows the D-Link DWL-900AP+ configuration interface. The left sidebar contains navigation buttons: Device Info, Log, Stats (highlighted in yellow), and Wireless. The main content area has a top navigation bar with Home, Advanced, Tools, Status (highlighted in yellow), and Help. Below the navigation bar, the page title is "DWL-900AP+ Enhanced 2.4GHz Wireless Access Point". The main content area is titled "Traffic Statistics" and contains the following text: "Traffic Statistics display Receive and Transmit Packets Passing through the DWL-900AP+". There are two sections: "Ethernet" and "Wireless".

Ethernet		
Send	Good Packets	185
	Dropped Packets	0
Recv	Good Packets	194
	Dropped Packets	0

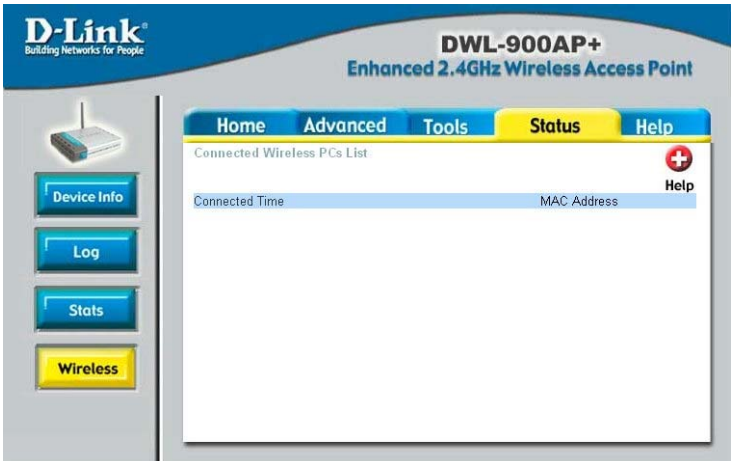
Wireless		
Send	Good Packets	7
	Dropped Packets	0
Recv	Good Packets	0
	Dropped Packets	0

A red plus icon and the word "Help" are located in the bottom right corner of the main content area.

Fig. 5.14

### Status > Wireless

Displays the list of computers that are connected to the DWL-900AP+ wirelessly.



The screenshot shows the D-Link DWL-900AP+ configuration interface. The left sidebar contains navigation buttons: Device Info, Log, Stats, and Wireless (highlighted in yellow). The main content area has a top navigation bar with Home, Advanced, Tools, Status (highlighted in yellow), and Help. Below the navigation bar, the page title is "DWL-900AP+ Enhanced 2.4GHz Wireless Access Point". The main content area is titled "Connected Wireless PCs List" and contains the following text: "Connected Time" and "MAC Address". A red plus icon and the word "Help" are located in the bottom right corner of the main content area.

Fig. 5.15

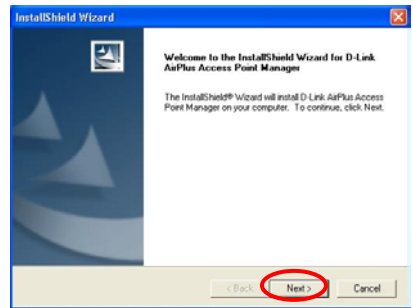
## 6. Using the *AirPlus AP Manager*

The *AirPlus Access Point Manger* is a Windows based program to help you manage multiple Access Points in one easy view.

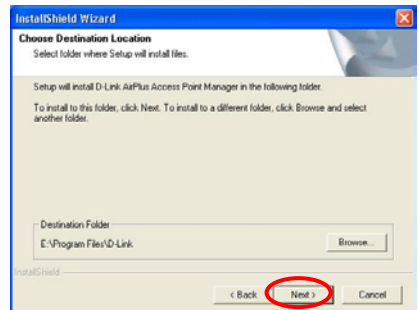
- Begin the installation by inserting the DWL-900AP+ CD into your CD-ROM. The AP Manager is also available for download at [support.dlink.com](http://support.dlink.com).
- Click **Install AirPlus AP Manager**



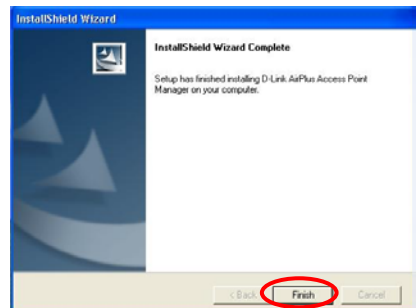
- The following screen will appear.
- Click **Next**



- Click **Next**



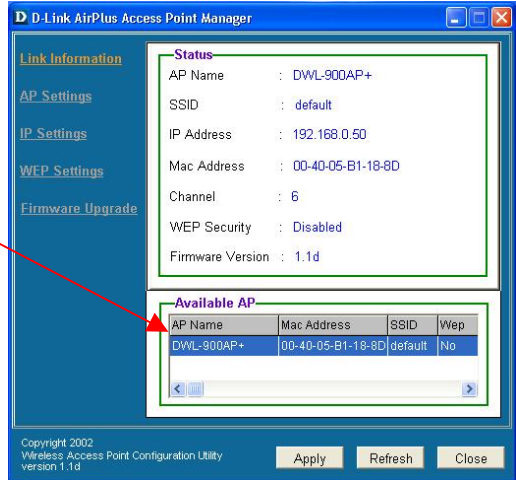
- Click **Finish** to complete installation.



# Using the AirPlus AP Manager

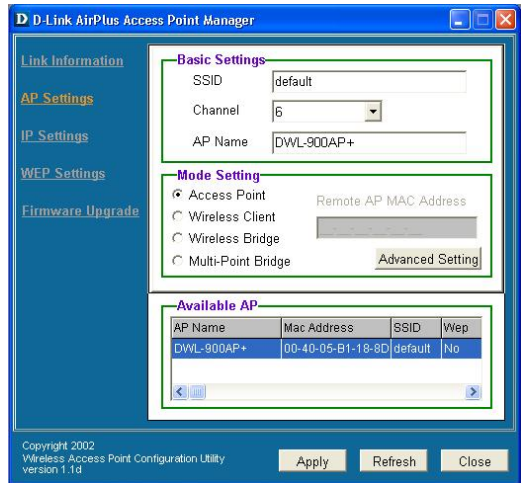
## Link Information

The Link Information screen displays the current settings of the selected Access Point



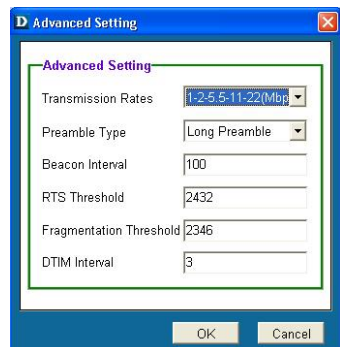
## AP Settings

The AP Settings screen will allow you to change the Access Point settings for the selected Access Point.



## AP Settings > Advanced Settings

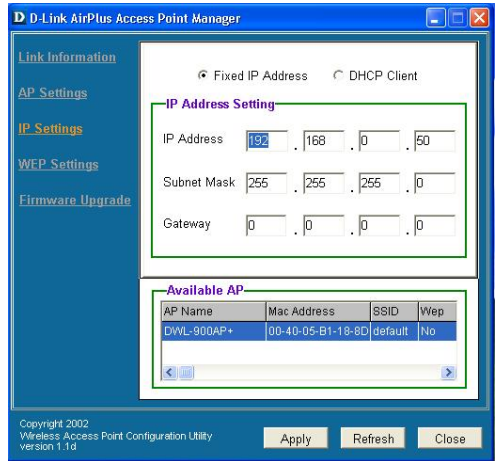
The Advanced Settings will allow you to adjust advanced settings for the selected Access Point.



# Using the AirPlus AP Manager

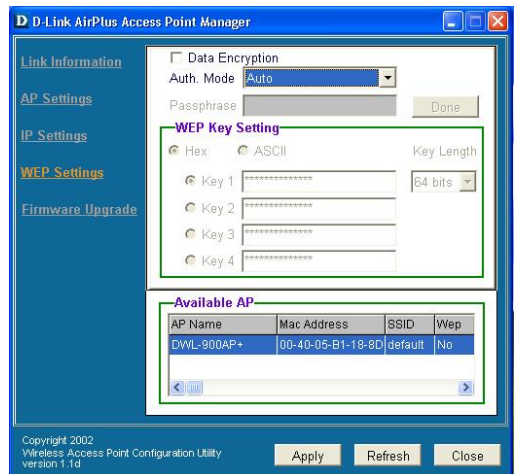
## IP Settings

The IP Settings screen will allow you to change the IP Address settings for the selected Access Point.



## WEP Settings

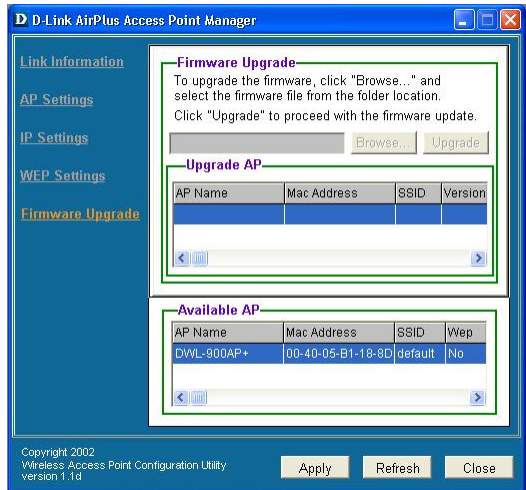
The WEP Settings Screen will allow you to apply Wireless Encryption Protocol to the selected Access Point.



# Using the *AirPlus AP Manager*

## Firmware Upgrade

The Firmware Upgrade screen will allow you to apply new version of the firmware to selected Access Point.





# 7. Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-900AP+ Wireless Access Point. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

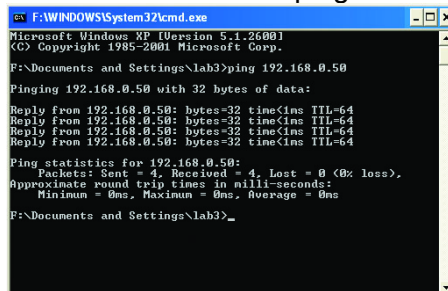
**Note:** It is recommended that you use an Ethernet connection to configure the DWL-900AP+ Access Point.

## 1. The computer used to configure the DWL-900AP+ cannot access the Configuration menu.

- Check that the **Ethernet LED** on the DWL-900AP+ is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.
- Check that the Ethernet Adapter is working properly. Please see item 3 (**Check that the drivers for the network adapters are installed properly**) in this **Troubleshooting** section to check that the drivers are loaded properly.
- Check that the **IP Address** is in the same range and subnet as the DWL-900AP+. Please see **Checking the IP Address in Windows XP** in the **Networking Basics** section of this manual.

**Note:** The IP Address of the DWL-900AP+ is 192.168.0.50. All the computers on the network must have a unique IP Address in the same range, e.g., 192.168.0.x. Any computers that have identical IP Addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0

- Do a **Ping test** to make sure that the DWL-900AP+ is responding. Go to **Start>Run>Type Command>Type ping 192.168.0.50**. A successful ping will show four replies.



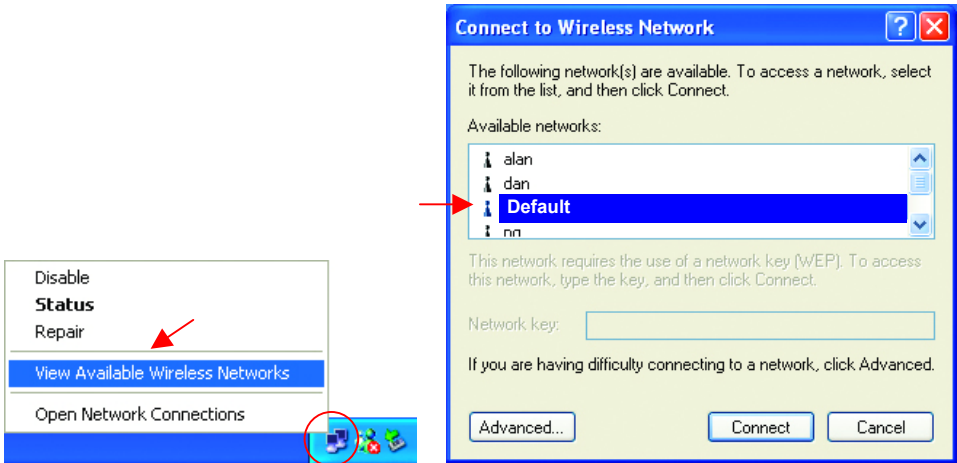
```
ex F:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
F:\Documents and Settings\lab3>ping 192.168.0.50
Pinging 192.168.0.50 with 32 bytes of data:
Reply from 192.168.0.50: bytes=32 time<ms TTL=64
Reply from 192.168.0.50: bytes=32 time<ms TTL=64
Reply from 192.168.0.50: bytes=32 time<ms TTL=64
Reply from 192.168.0.50: bytes=32 time<ms TTL=64

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
F:\Documents and Settings\lab3>_
```

# Troubleshooting

## 2. The wireless client cannot access the Internet in the Infrastructure mode.

- Make sure the wireless client is associated and joined with the correct Access Point. To check this connection: **Right-click** on the **Local Area Connection icon** in the taskbar > select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.



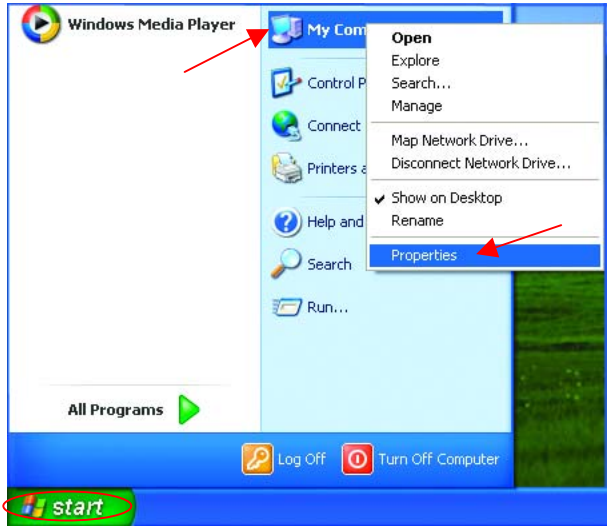
- Check that the **IP Address** assigned to the wireless adapter is within the same **IP Address range** as the access point and gateway. *Since the DWL-900AP+ has an IP Address of 192.168.0.50, wireless adapters must have an IP Address in the same range, e.g., 192.168.0.x. Each device must have a unique IP Address; no two devices may have the same IP Address. The subnet mask must be the same for all the computers on the network.)* To check the **IP Address** assigned to the wireless adapter, **double-click** on the **Local Area Connection icon** in the taskbar > select the **Support tab** and the **IP Address** will be displayed. (Please refer to **Checking the IP Address** in the **Networking Basics** section of this manual.)
- If it is necessary to assign a **Static IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS Server address** you must also enter the **Default Gateway Address**. (Remember that if you have a **DHCP-capable router**, you will not need to assign a **Static IP Address**. See **Networking Basics: Assigning a Static IP Address**.)

## Troubleshooting

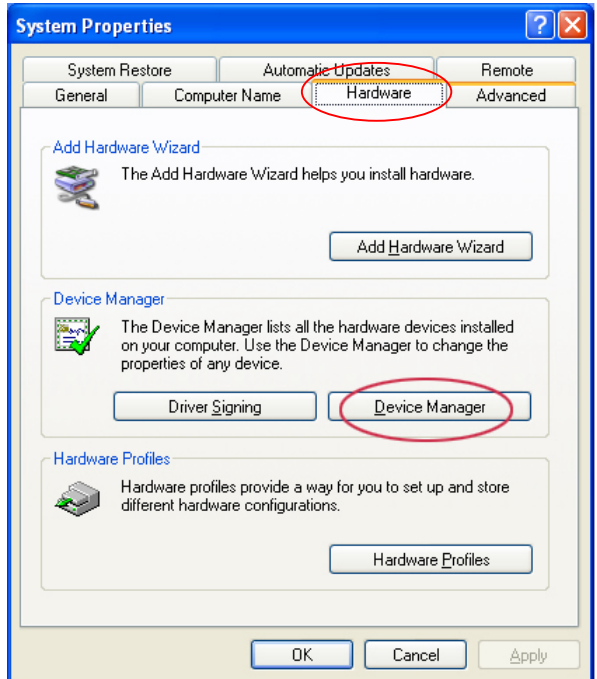
### 3. Check that the drivers for the network adapters are installed properly.

You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

- Go to **Start**
- **Right-click** on **My Computer**
- Click **Properties**

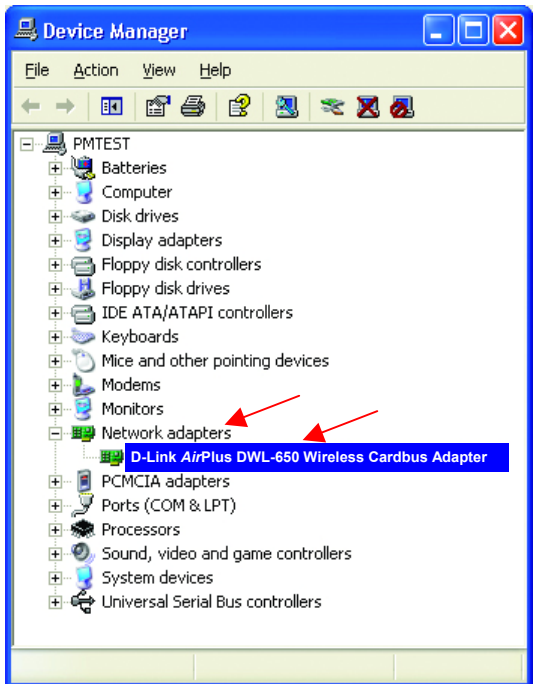


- **Select the Hardware Tab**
- Click **Device Manager**

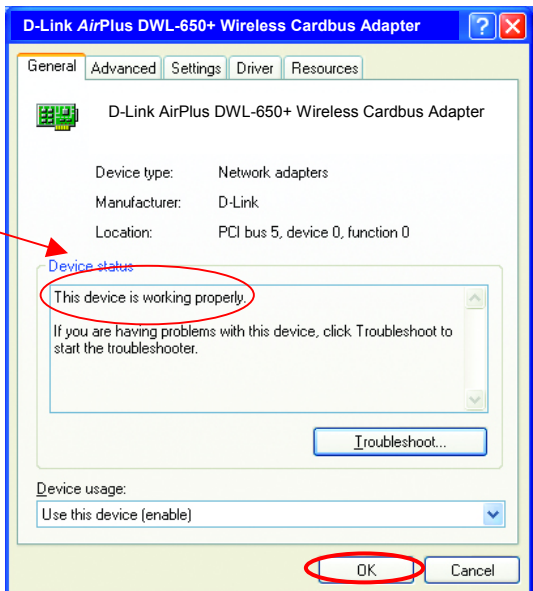


# Troubleshooting

- Double-click on **Network Adapters**
- **Right-click** on **D-Link AirPlus DWL-650+ Wireless Cardbus 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

### 4. Resetting the DWL-900AP+ to Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DWL-900AP+ to the factory default settings. Remember that D-Link *AirPlus* products network together, out of the box, at the factory default settings.



To hard-reset the D-Link *AirPlus* DWL-900AP+ to Factory Default Settings, please do the following:

- Locate the **Reset** button on the back of the DWL-900AP+
- Use a paper clip to press the **Reset** button.
- Hold for about 5 seconds and then release
- After the DWL-900AP+ reboots (this may take a few minutes) it will be reset to the factory **Default** settings.

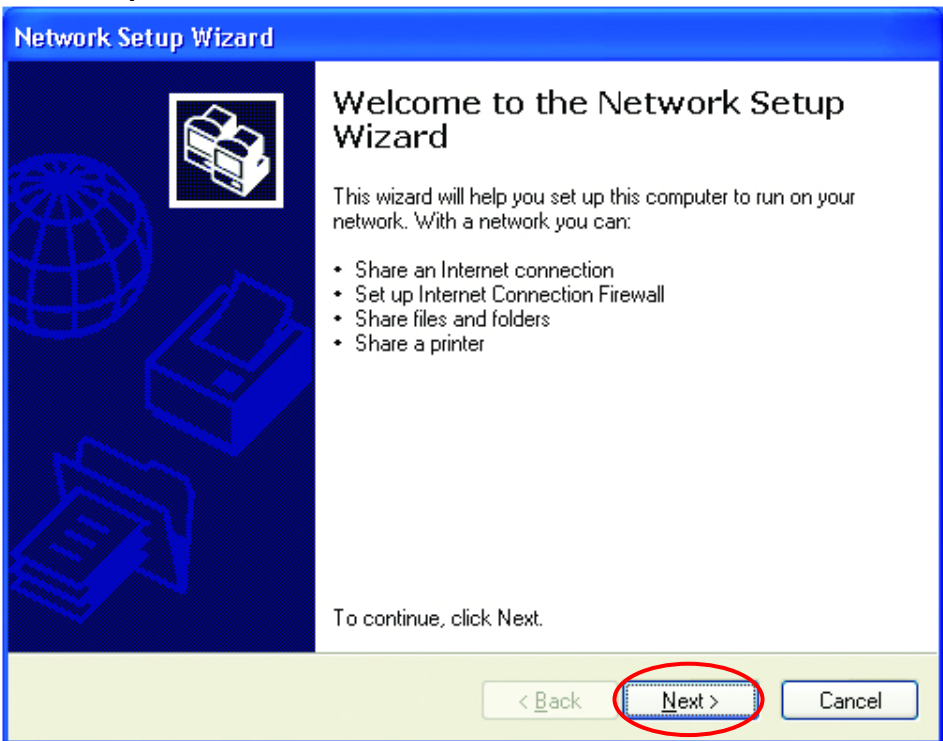
## 8. Networking Basics

### 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 98.*

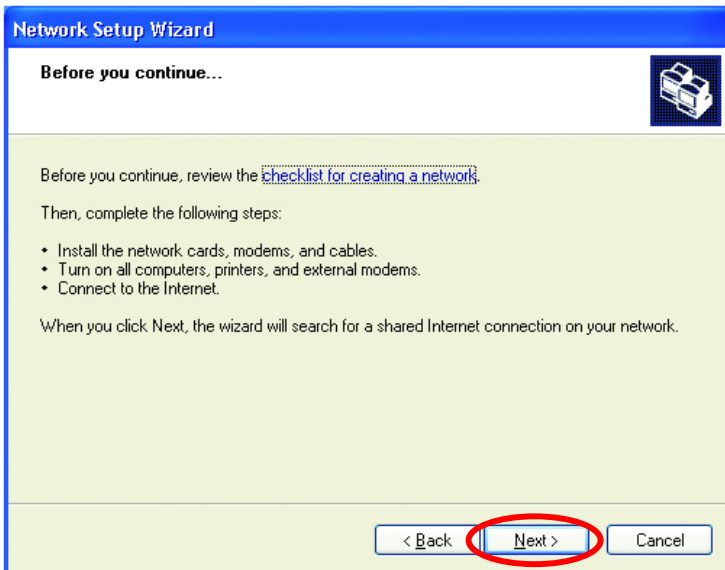
Go to **Start>Control Panel>Network Connections**  
Select **Set up a home or small office network**



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

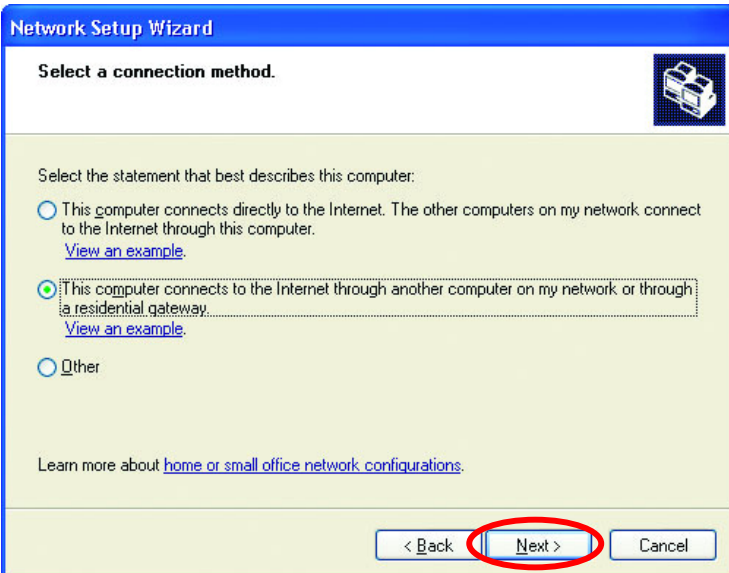
## Networking Basics

Please follow all the instructions in this window:



Click **Next**

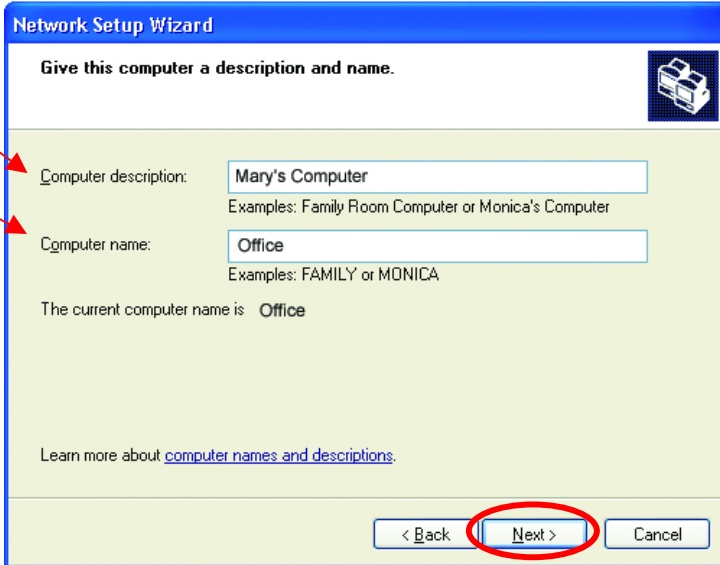
In the following window, select the best description of your computer. If your computer connects to the Internet through a gateway/router, select the second option as shown.



Click **Next**

## Networking Basics

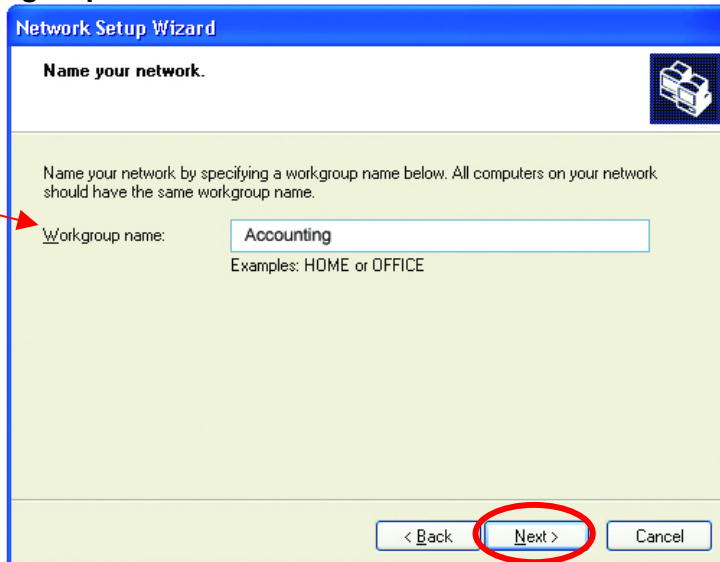
Enter a **Computer description** and a **Computer name** (optional.)



The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' It features a printer icon in the top right corner. Below the title bar, there are two text input fields. The first is labeled 'Computer description:' and contains the text 'Mary's Computer'. Below it, there are examples: 'Examples: Family Room Computer or Monica's Computer'. The second field is labeled 'Computer name:' and contains the text 'Office'. Below it, there are examples: 'Examples: FAMILY or MONICA'. A line of text below the fields reads 'The current computer name is Office'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. Two red arrows point to the left side of the 'Computer description:' and 'Computer name:' labels.

Click **Next**

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



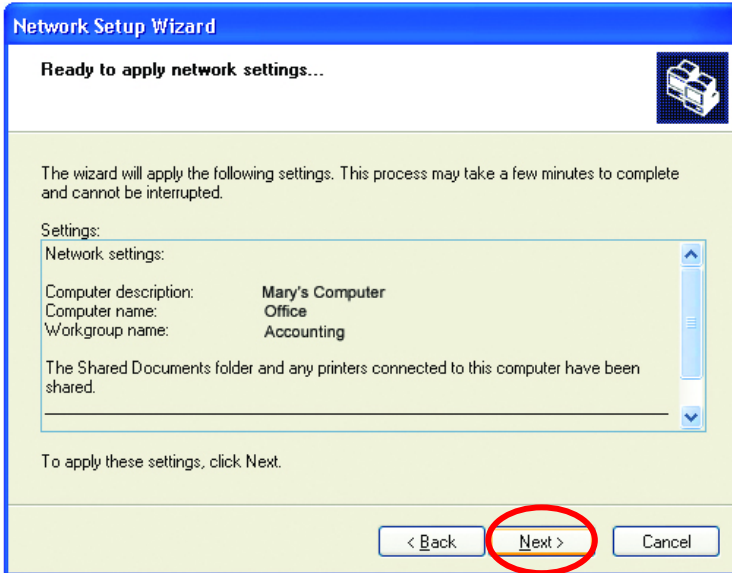
The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' It features a printer icon in the top right corner. Below the title bar, there is a paragraph of text: 'Name your network by specifying a workgroup name below. All computers on your network should have the same workgroup name.' Below this text is a text input field labeled 'Workgroup name:' containing the text 'Accounting'. Below the field, there are examples: 'Examples: HOME or OFFICE'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. A red arrow points to the 'Workgroup name:' label.

Click **Next**



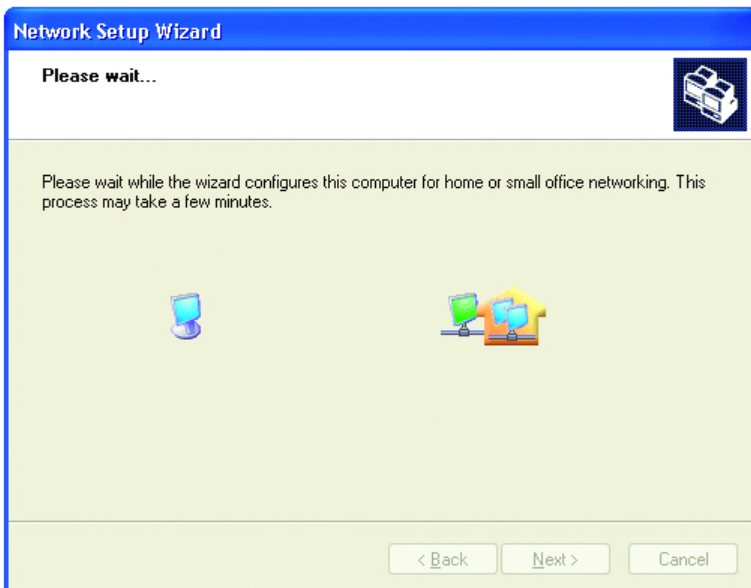
## Networking Basics

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



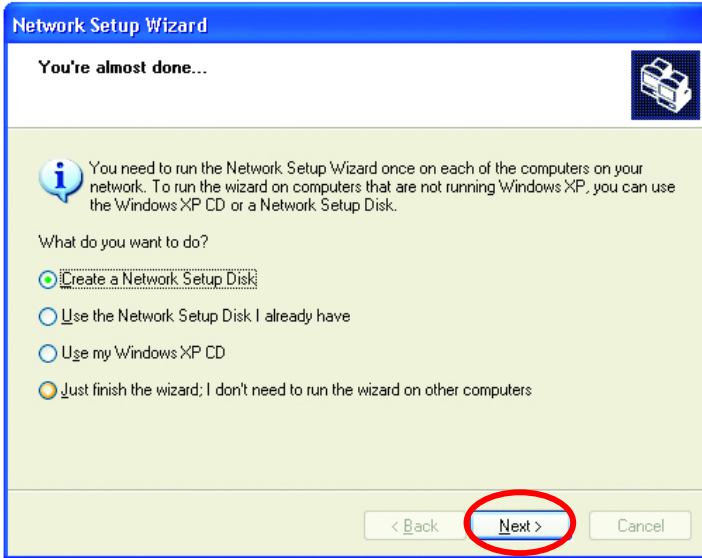
When the changes are complete, click **Next**.

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

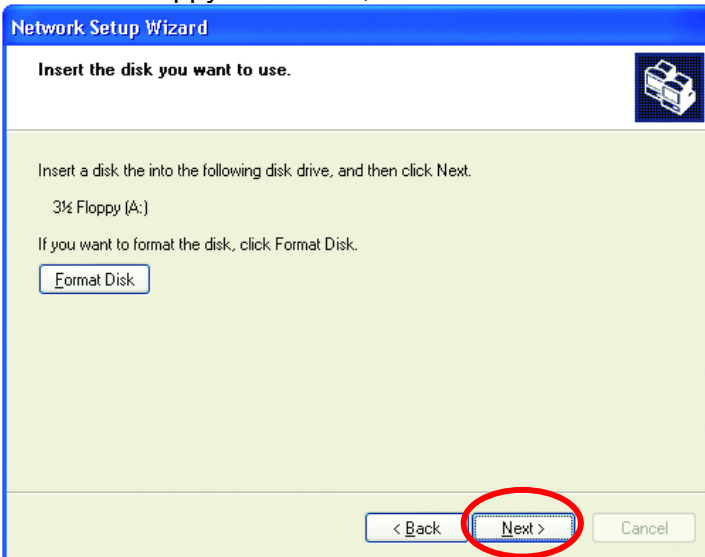


## Networking Basics

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**.



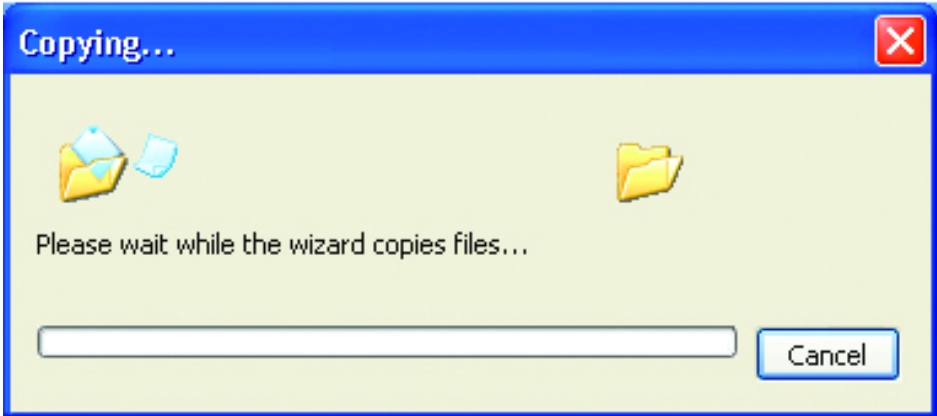
Insert a disk into the Floppy Disk Drive, in this case drive **A**.



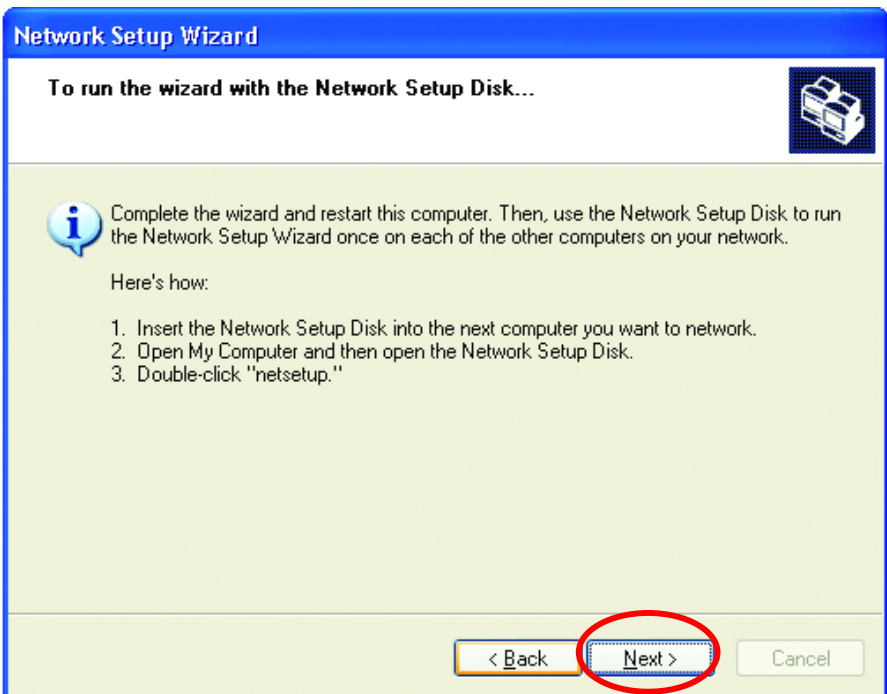
Format the disk if you wish, and click **Next**.

## Networking Basics

Please wait while the **Network Setup Wizard** copies the files.

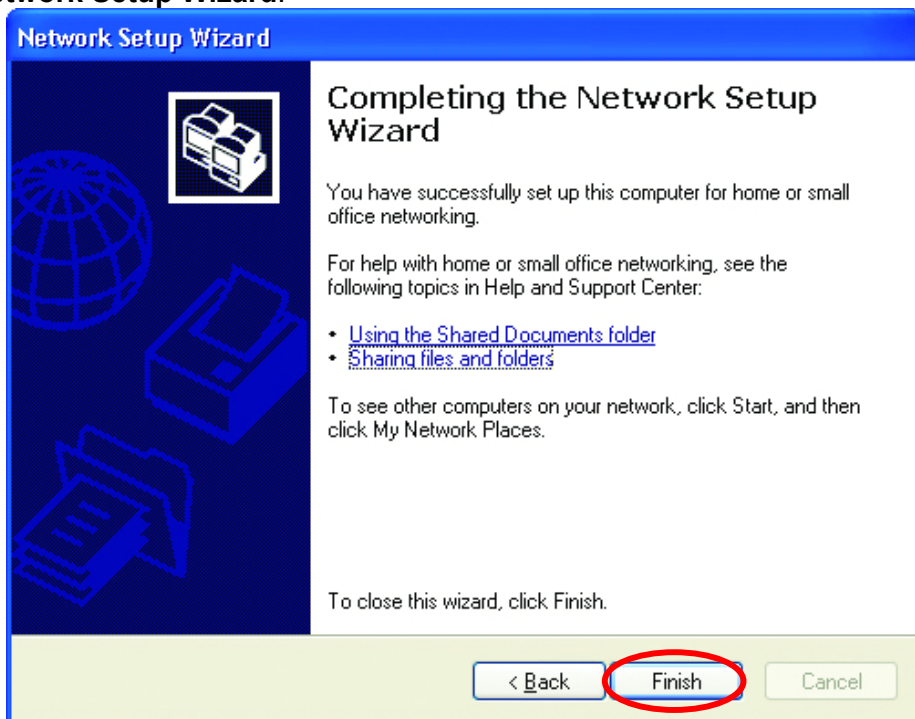


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next**.

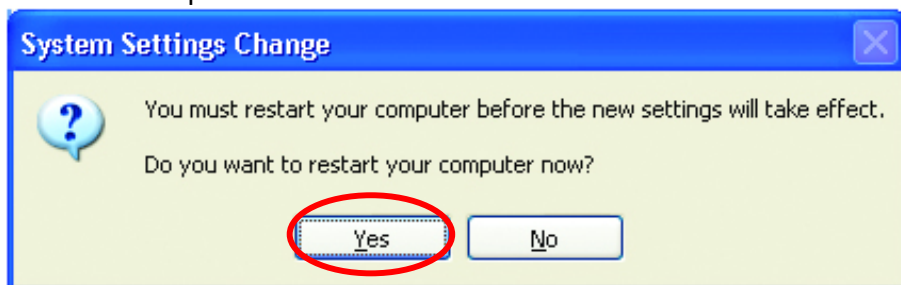


## Networking Basics

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.

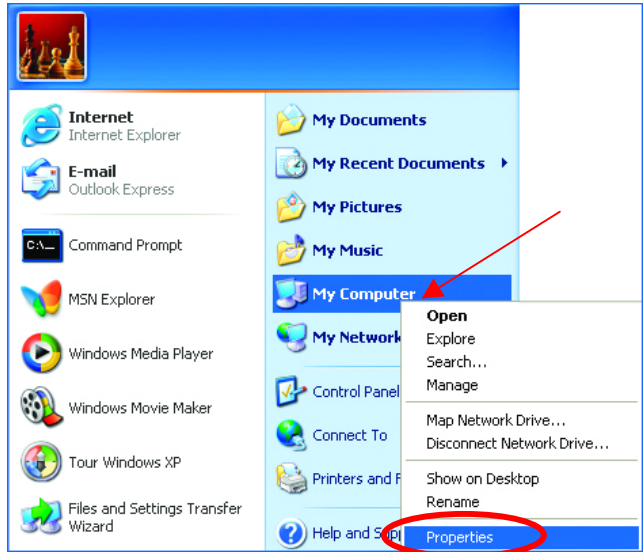
# Networking Basics

## Naming your Computer

To name your computer, please follow these directions:

In **Windows XP**:

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

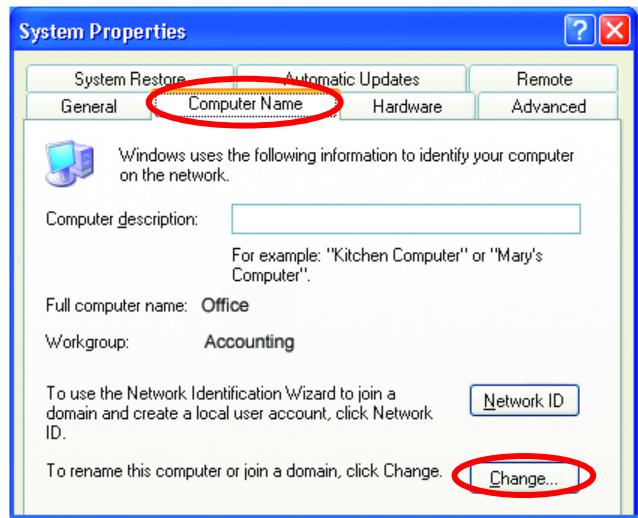


- Select the **Computer Name Tab** in the **System Properties** window.

*You may enter a **Computer description** if you wish, this field is optional.*

To rename the computer and join a domain,

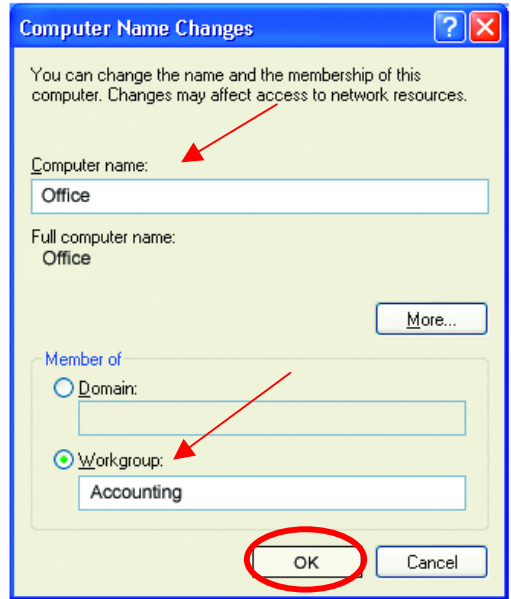
- Click **Change**



## Networking Basics

### 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/2000

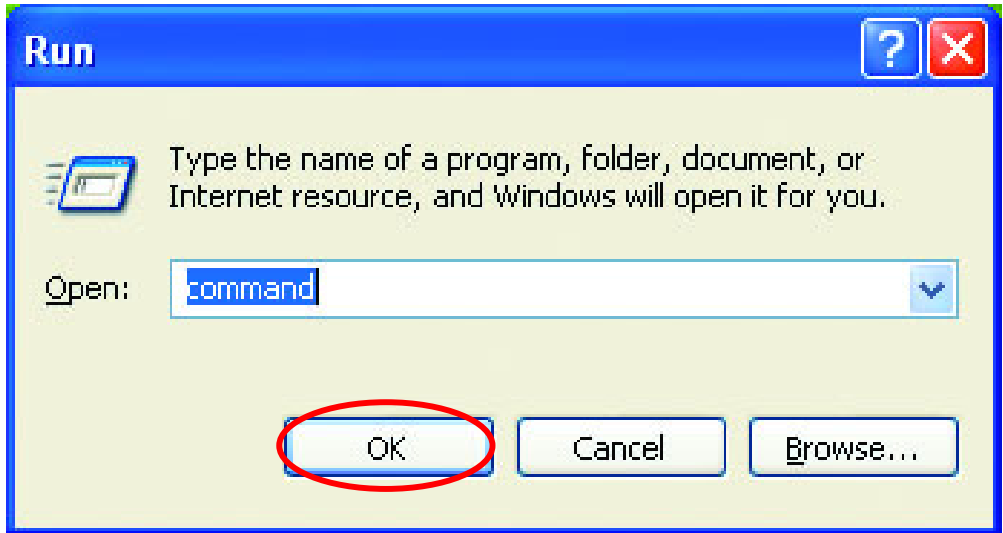
Go to **Start > All Programs > Accessories > Command Prompt**



## Networking Basics

### Checking the IP Address in Windows XP/2000

Type Command



Click **OK**

### Checking the IP Address in Windows XP/2000

Type **ipconfig /all** at the prompt. Press **Enter**. All the configuration settings are displayed as shown below.

