

D-Link *Air* DWL-810

Ethernet Wireless Client Adapter

Manual

Rev. 020305

D-Link
Building Networks for People

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1. Package Contents



Contents of Package:

- **D-Link Air DWL-810** Ethernet Wireless Client Adapter
- One AC power adapter
- Manual, QIG, and Driver on CD
- Straight-Through cable
- Quick Installation Guide

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

System Requirements:

- A network device, such as a game console or set-top box, with an available Ethernet port

Additional Optional Advanced Configuration Requirements:

- A current web-browser (e.g., Internet Explorer 5.x or Netscape Navigator 4.x)
- Windows XP, Windows 2000, Windows Me, Windows 98, Windows 95, Unix, Linux
- A Cross-Over cable is required to connect the DWL-810 to a switch

2. Introduction

The D-Link *Air* DWL-810 Ethernet Wireless Client Adapter can be configured to take on a variety of roles within the wireless network. For devices with built-in Ethernet support, the DWL-810 provides a cost effective way to gain wireless connectivity, virtually transforming a wired network into a wireless one! Connect any Ethernet-enabled device to an 802.11b wireless network using the DWL-810.

The DWL-810 contains a processor, a socket for a Compact Flash wireless card, and an Ethernet adapter. Typical applications include connecting a desktop PC to a wireless network, and connecting Ethernet-capable devices such as video game systems to Wireless Local Area Networks (WLAN.) Using the DWL-810 allows flexibility in the placement of network devices.

Simply connect the DWL-810 to the Ethernet port (RJ-45) of a network device, such as a network storage device, Internet camera, network printer, network scanner, video game system, or other network device. Computers with installed wireless network adapters (NIC cards) will then be able to access the network device wirelessly.

In Ad-Hoc mode, there is no configuration required. For example, install the DWL-810 into a network device (using Ad-Hoc mode), such as a web camera. The camera will automatically communicate with a wireless adapter-equipped (DWL-650) laptop that is also set to Ad-Hoc mode.

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.

Features and Benefits

- Transforms an Ethernet port into a wireless connection
- Fast 11Mbps wireless connection which is fully compatible with standard 802.11b-compliant devices
- Equipped with a 10BasedT Ethernet port
- Easy and Fast Wireless connectivity for Ethernet devices
- Supports Ad Hoc or Infrastructure modes
- Easy installation
- No configuration required for Ad-Hoc Mode
- Easy web-based configuration for Infrastructure Mode
- Flash memory for easy software upgrades
- WEP encryption ensures security

LEDs

LED stands for **L**ight-**E**mitting **D**iode. The DWL-810 has two LEDs:



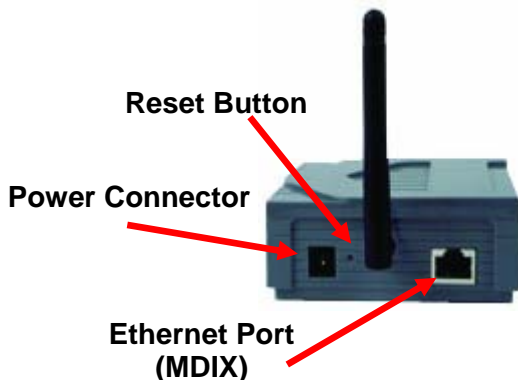
Wireless Link/Act – a steady **Orange** light indicates a good wireless connection. A blinking light indicates that the DWL-810 is receiving/transmitting from/to the wireless network.

Power – a steady **Green** light indicates a proper connection to a power source.

Connections

Rearview

Ethernet Port – an RJ-45 jack provides connection to a network device using a Cat 5 Ethernet cable. (Use **Straight-Through** CAT5 cable when connecting to another Ethernet adapter, like the port in a gaming device; use a **Cross-Over** CAT5 cable when connecting to a switch.)



Reset Button – press this button to revert to the factory default settings of the DWL-810

Power Connector – connect one end of the included 5V DC Power Adapter into the power port on the DWL-810 and connect the other end of the Power Adapter to a wall outlet.

*Category 5 is the most reliable grade of twisted-pair cable. It is either **Straight-Through** cable or **Cross-Over** cable. Always check your installation instructions to make sure that you have selected the correct type of Category 5 cable. For the DWL-810, you will use **Straight-Through** cable to connect to the computer during configuration and to connect to a network device for wireless sharing. Use a **Cross-Over** cable to connect to a switch.*

Default Settings

Operating Mode	Ad -Hoc
SSID	default
Channel	6
Transmission rates	Auto
WEP enable	No
Administrator password	Blank (no password needed)
IP Address	192.168.0.30
IP Subnet	255.255.255.0
username	admin

3. Wireless Basics

With the DWL-810 you can access many LAN (Local Area Network) devices wirelessly. Simply plug the DWL-810 into the Ethernet port of a network device (such as a printer or web camera,) in Ad-Hoc mode, for an immediate wireless connection with a wireless network adapter equipped device.

If you are planning a larger wireless network, D-Link can supply most of your wireless local area network needs. In this section, we discuss typical wireless local area networks (WLANs) and their components. Much of the advice given here may be helpful in setting up the DWL-810. It may also give you some ideas, if you plan to expand your wireless network.

D-Link *Air* wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or wherever a wireless network is available. Strictly adhering to the IEEE standard, the D-Link *Air* family of wireless products will allow you to access the data you want, when and where you want it. No longer will you be limited to one location or forced to run new wiring through your home or office. 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 with the absence of cabling and other fixed infrastructure has 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. For most users, there is no noticeable functional difference between a wired Ethernet desktop computer and a wireless computer equipped with a wireless adapter other than the added benefit of the ability to roam within a wireless-cell. 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 one device used to provide this link.

Now, without an Access Point, or a wireless LAN, you can access a network device (such as a network printer, network scanner, web camera or gaming

Wireless Basics

device) wirelessly, quickly and easily, with no need for configuration in Ad-Hoc mode, using the DWL-810.

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 install cable through walls and ceilings.

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 Air Wireless Family of LAN products include:

- ◆ 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650)
- ◆ 2.4GHz Wireless PCI cards used with desktop computers (DWL-520)
- ◆ Wireless USB Adapter (DWL-120)

Wireless Basics

The DWL-810 is also compatible with the D-Link AirPlus 802.11b family of products that 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+)
- ◆ Wireless Access Points (DWL-900AP+)

Standards - Based Technology

The IEEE standard-based technology assures that the D-Link *Air* Products are interoperable with existing compatible 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. D-Link *Air* products will automatically sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

Installation Considerations

Designed to go up to 984 feet (300 meters) outdoors and up to 328 feet (100 meters) indoors, the D-Link *Air* DWL-810 lets you access your network devices wirelessly from virtually anywhere. Keep in mind, however, that the number, thickness and location of walls, ceilings or other objects that the wireless signal must pass thru may limit range. Typical ranges vary depending on the types of materials and any background RF (radio frequency) noise in your home or business. The key to maximizing range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the DWL-810 and your receiving device (e.g., the DWL-520) to a minimum - Each wall or ceiling can reduce your D-Link *Air* Wireless product's range from 3-90 feet (1-30 meters.) Position your DWL-810, Access Points, Residential Gateways, and computers so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between the DWL-810 and the device with which it communicates, as well as 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

Wireless Basics

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 the DWL-810, the Access Points, 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 may generate extreme RF noise.

Using radio frequency (RF) technology, the DWL-810 transmits and receives data over the air, eliminating the need for a wired connection.

4. Getting Started

Right out of the box, in AD-HOC mode (the default setting) and with its other default settings, the DWL-810 will automatically connect with other network devices that are also set to AD-HOC.

There are two modes of networking:

Infrastructure – using an Access Point, such as the DWL-1000AP

Ad-Hoc – directly communicating with another network device, without an Access Point

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. The **Infrastructure Network** example shown on the following page contains the following D-Link network devices:

A wireless DHCP Router/Access Point/Print Server -	D-Link Air DI-713P
A laptop computer with a wireless network adapter -	D-Link AirPlus DWL-650+
A desktop computer with a wireless network 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 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



Fig. 4.1

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 a wireless Broadband router (such as the **D-Link DI-713P**.) See the **Quick Installation Guide** included with the router.
- 4** Install the drivers for the DWL-520+. See the **Quick Installation Guide** included with the DWL-520+.
- 5** Install the drivers for the wireless network adapter (such as the **D-Link AirPlus DWL-650+**) into the laptop computer. See the **Quick Installation Guide** included with the DWL-650+.

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.

Getting Started

Setting up a Wireless Ad Hoc Network



Fig. 4.2

- 1** Install the **D-Link AirPlus DWL-520+** Wireless Network adapter into the desktop computer. *See the **Quick Installation Guide** included with the product for installation instructions.*
- 2** Install a wireless network adapter into the laptop computer. In the example above the **DWL-650+** is installed into a 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. (See Box below)

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.

5. Pre-Installation

If you are using the DWL-810 in **Ad-Hoc** mode, skip this section and proceed to **Section 7: Installation**.

Read this section if you are using the DWL-810 in **Infrastructure Mode** or if you plan to configure the DWL-810.

Before installing the DWL-810 you must do the following:

- A. **Assign an IP Address to the laptop or computer** that you are using to configure the DWL-810, which is within the IP Address range of the DWL-810. See the **Assigning a Static IP Address** section that follows.
- B. **Configure the DWL-810**. Connect the DWL-810 to a laptop or computer using a Cat5 Ethernet cable. Refer to **Web Configuration** in this manual for instructions on how to configure the DWL-810.
- C. **Connect the DWL-810 to a network device**, after you have configured it. See **Installing the DWL-810** in this manual.

Assigning a Static IP Address to configure the DWL-810

To assign a Static IP Address to the laptop you are using to configure the DWL-810, please do the following:

(Below are illustrations in Windows XP that show the D-Link DWL-650 Wireless Cardbus Adapter. Other operating systems and other wireless network adapters will have similar procedures for assigning a Static IP Address.)

If the computer you are using for configuration already has a Static IP Address, be sure to make a note of it. You will need to re-input the original Static IP Address after you configure the DWL-810.

- Go to **Start**
- Click on **Control Panel**

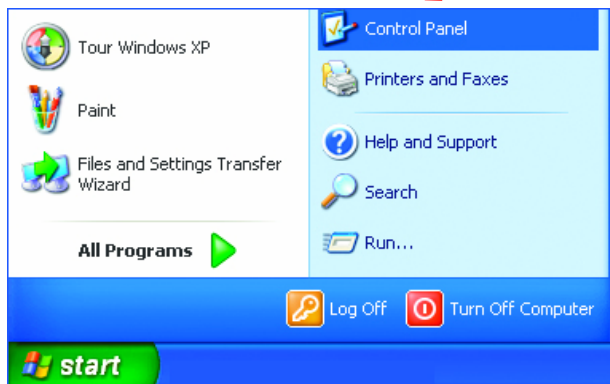


Fig. 5.1

Assigning a Static IP Address to configure the DWL-810

- Double-click on **Network Connections**

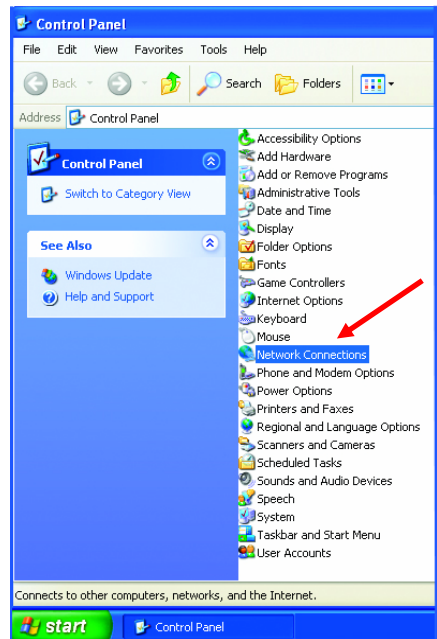


Fig. 5.2

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

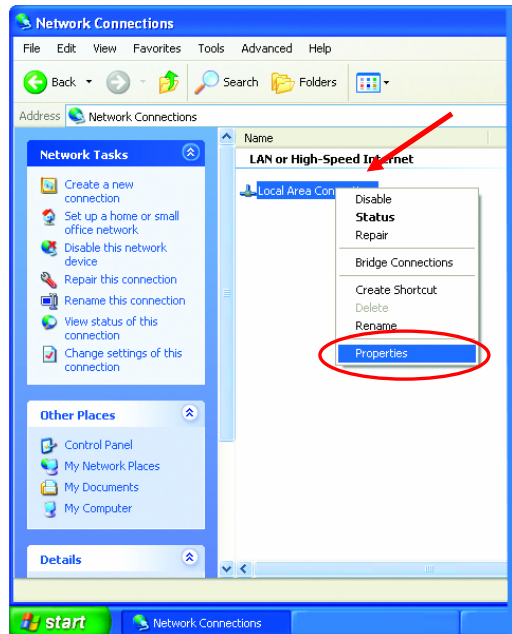


Fig. 5.3

Assigning a Static IP Address

- Highlight **Internet Protocol (TCP/IP)**
- Click **Properties**

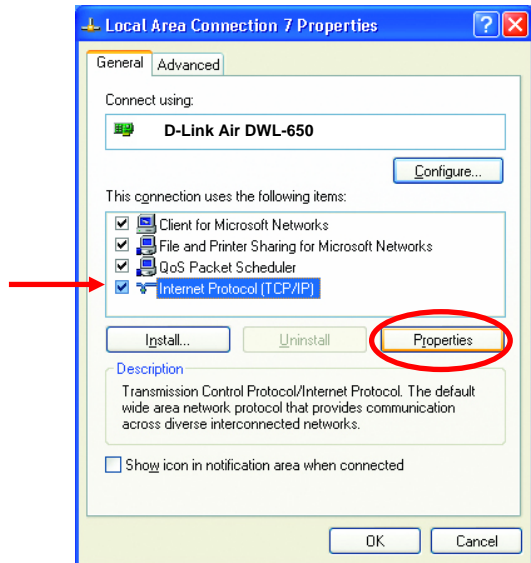


Fig. 5.4

- Select **Use the following IP address** in the **Internet Protocol (TCP/IP) Properties** window (Fig. 5.5)
- Input your **IP address and subnet mask**. (The IP Address must be within the same range as the DWL-810. The IP Address of the DWL-810 is 192.168.0.30. You can assign 192.168.0.2 for your laptop. **No two computers can have the same IP Address**. Assign a subnet mask of 255.255.255.0.)

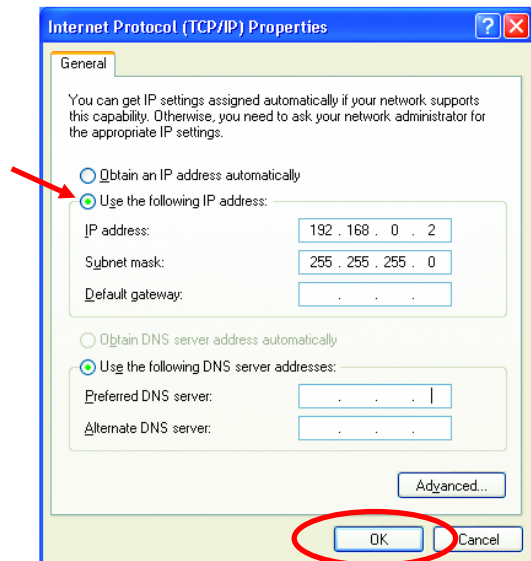


Fig. 5.5

- Click **OK**

You have completed the assignment of a Static IP Address.

6. Web Configuration

No Configuration is needed when you use the DWL-810 in Ad-Hoc Mode.

Configuration is required **only** if you will be using the DWL-810 in Infrastructure mode. If you will be using the DWL-810 in Infrastructure mode or if you need to configure the DWL-810, please consider the following before using the Web Configuration:

You will need a JavaScript-enabled web-browser such as the Internet Explorer 4.0 or higher, or the 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-810. The DWL-810 has a default IP Address of 192.168.0.30 with a subnet mask of 255.255.255.0

*You will need to assign a Static IP Address to the computer that you are using to configure the DWL-810, within the IP Address Range of the DWL-810. For example, you can assign a Static IP address of 192.168.0.2 with a subnet mask of 255.255.255.0 (Please see the **Pre-Installation** or the **Networking Basics** sections in this manual for information on **Assigning a Static IP Address.**)*

After you have assigned a Static IP Address to the computer you are using for configuration, next you will assign the DWL-810 an IP Address within the range of your existing network.

You will temporarily lose connection to the DWL-810. In order to regain connection to the DWL-810, after changing its IP Address, revert to the IP address that you had for this computer before you began the configuration, as follows:

- If this 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.*

Web Configuration

Factory Default Settings for the DWL-810

Operating Mode	Ad-Hoc
SSID	default
Channel	6
Transmission rates	Auto
WEP enable	No
Administrator password	Blank (no password needed)
IP Address mode	Static
IP Address	192.168.0.30
IP Subnet	255.255.255.0
username	admin

Access the Web Configuration by opening the web-browser and typing in the IP Address of the DWL-810. The DWL-810 default IP Address is `http://192.168.0.30`, as shown below:

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

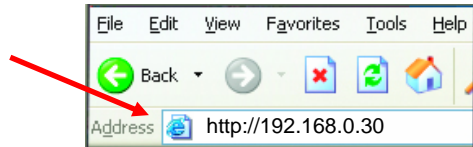


Fig. 6.1

(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-810 to conform to a network other than one with D-Link devices, at their default setting, then input that IP Address in the web browser, instead of the default IP Address shown.)

- Type **admin** (lower case) in the **User Name** field
- Leave the **Password** blank
- Click **OK**



Fig. 6.2

Web Configuration

Information

The Configuration window will appear. Select **Information** in the menu, as shown. The **Information** window displays the current setup status of the DWL-810.



Fig. 6.3

Select **Wireless** in the menu, as shown. A wireless table will appear as shown below. The various input fields may be used to configure the 802.11b wireless and security settings.

Wireless

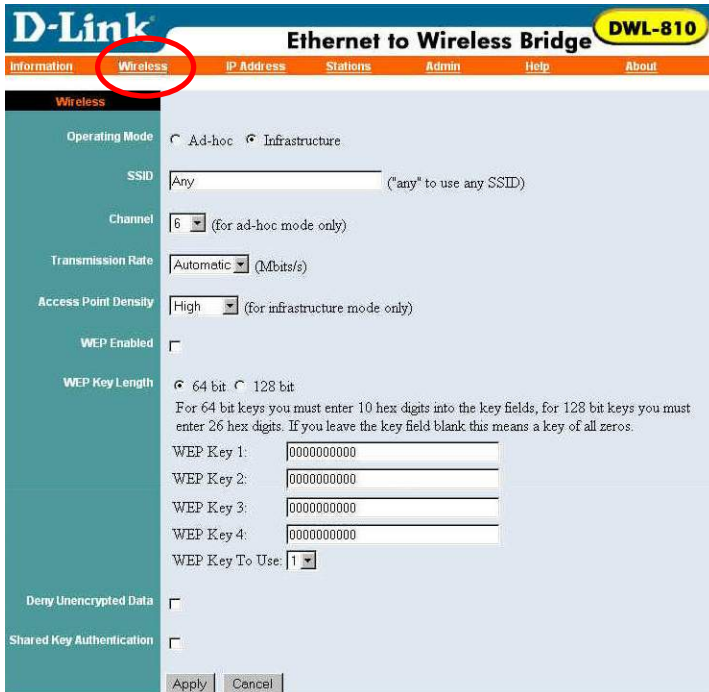


Fig. 6.4

Web Configuration

Wireless

Operating Mode: **Ad-Hoc** - is the default setting. Choose **Ad-Hoc** or **Infrastructure**. (*Connect right out of the box with the **Ad-Hoc** setting, when communicating with another device that is also set to **Ad-Hoc**.*)

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 the SSID of the Access Point or the Ad-Hoc wireless workgroup to which you wish to connect.

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.

Transmission Rate: **Automatic** is the default setting. Choose the transmission rate of the DWL-810 from the pull-down menu.

Access Point Density: This field describes the density of the Access Points and the traffic level of the wireless network running on Infrastructure Mode, which is determined by the number of Access Points in your wireless network and the configuration of the Access Points. Use the pull-down menu to choose from the 3 options: Low, Medium, or High.

WEP Enabled: The default setting is **Disable**. Wireless network communications are easily intercepted. WEP (Wired Equivalent Privacy) is an encryption method specified by the 802.11b standard to make any intercepted communications extremely difficult to interpret by unauthorized parties. All devices on the network, and the Access Point, must share the same WEP selection – either **Enable** or **Disable**. To enable WEP Encryption, click on **WEP Enable**.

WEP Key Length: The default Key Length is **64-bit**.

The WEP key is generated from **Hexadecimal** entries that are either 64 or 128-bit in length. When enabling encryption, select the Key Length, either 64 or 128-bit, and then input the Hexadecimal digits. You can create up to 4 keys.

*Hexadecimal digits consist of the numbers 0-9 and the letters A-F
A 64-bit WEP key requires 10 Hexadecimal digits.
A 128-bit WEP key requires 26 Hexadecimal digits.*

Web Configuration

WEP Key to Use: Use the pull-down menu to select the WEP key. All devices on the network must use the same key to communicate with one another. ***Please be careful when entering WEP values, any input error will result in a communication failure.***

Deny Unencrypted Data: By default, this item is not selected. For additional security when WEP is enabled, select **Deny Unencrypted Data**. Data received without a WEP key is rejected when **Deny Unencrypted Data** is selected.

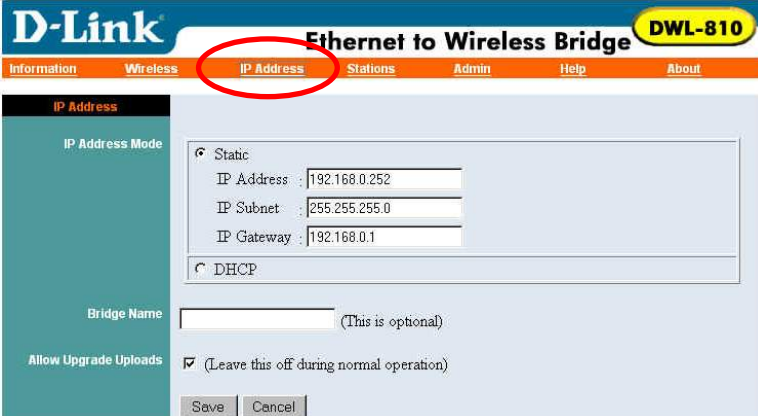
Shared Key Authentication: By default, this is not selected. If you would like to include a WEP check before allowing connection on the network, select this item. If it remains unselected, only the SSID will be checked before authorizing connection.

Click **Apply** to update the settings. Click **Cancel** to discard any changes you have made. Changes will only take effect after you restart the DWL-810.

To restart, click on **Admin** in the system tool bar. Click **Reboot** in the Admin window.

Click on **IP Address** in the menu. The default settings are displayed. To change the settings, input information into the following fields:

IP Address



The screenshot shows the web configuration interface for a D-Link DWL-810 Ethernet to Wireless Bridge. The top navigation bar includes 'Information', 'Wireless', 'IP Address' (circled in red), 'Stations', 'Admin', 'Help', and 'About'. The main content area is titled 'IP Address' and contains the following settings:

- IP Address Mode:** A radio button menu with 'Static' selected and 'DHCP' unselected.
- Static Settings:**
 - IP Address: 192.168.0.252
 - IP Subnet: 255.255.255.0
 - IP Gateway: 192.168.0.1
- DHCP Settings:** A radio button for 'DHCP' is unselected.
- Bridge Name:** An empty text field with '(This is optional)' to its right.
- Allow Upgrade Uploads:** A checked checkbox with '(Leave this off during normal operation)' to its right.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

Fig. 6.5

Static: Select **Static (recommended)** to assign the IP Address, the Subnet Mask and the Gateway Address of the DWL-810.

DHCP: Select DHCP if a DHCP-capable router on the network will assign an IP Address to the DWL-810. **(This is not recommended because a DHCP-assigned IP Address will change frequently, making the DWL-810 impossible to configure.)**

Web Configuration

Static 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.

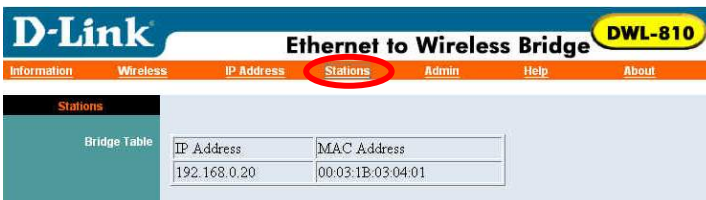
Bridge Name: The default setting is to leave this field blank. You may enter a name for the DWL-810. This is optional.

Allow Upgrade Uploads: When upgrading firmware, select this checkbox. Deselect this checkbox during normal operation, when not upgrading firmware.

After completing the configuration, click **Save** to save the changes. Click **Cancel** to discard the changes.

Changes will take effect after restarting the DWL-810. To restart, click **Admin** in the menu. Click **Reboot** to restart the DWL-810.

Stations



Stations	
Bridge Table	
IP Address	MAC Address
192.168.0.20	00:03:1B:03:04:01

Fig. 6.6

Click on **Stations** in the menu. A **Stations** table will appear, as shown here, providing information regarding the device connected to the DWL-810.

Bridge Table: the table displays the IP Address and the MAC Address of the device that is wirelessly connected to the DWL-810.

Web Configuration

Admin

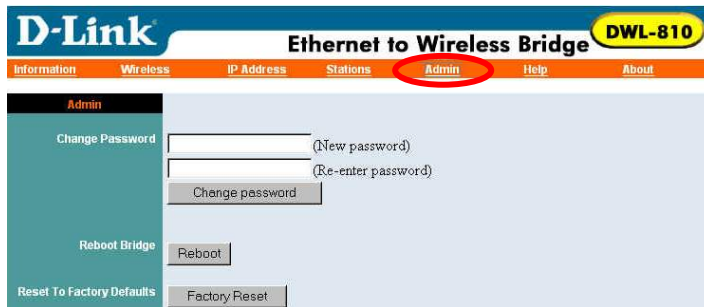


Fig. 6.7

Click on **Admin** in the menu. An **Admin** window will appear. Here you can change the password, restart the DWL-810 or reset it to factory default.

Change Password: You can use a password to prevent tampering with the configuration of the DWL-810. By default, no password is required. However, if you choose to use a password, type in a password that is no more than 15 letters in length. Re-enter the password in the next field, and click **Change Password** for the change to take effect. *(Please make a note of your password; anyone who accesses the configuration menu will be required to enter the password you have selected.)*

Reboot Bridge: Click **Reboot** to restart the DWL-810. Saved settings will be retained.

Reset to Factory Defaults: Click on **Factory Reset** to return all settings to the Factory Default values. *(Press the Reset button on the back of the unit for approximately 5-10 seconds and release to return the DWL-810 to its factory default settings.)*

Note: *If you reset the DWL-810 to its factory default settings, you will need to reconfigure the unit.*

Web Configuration

Help

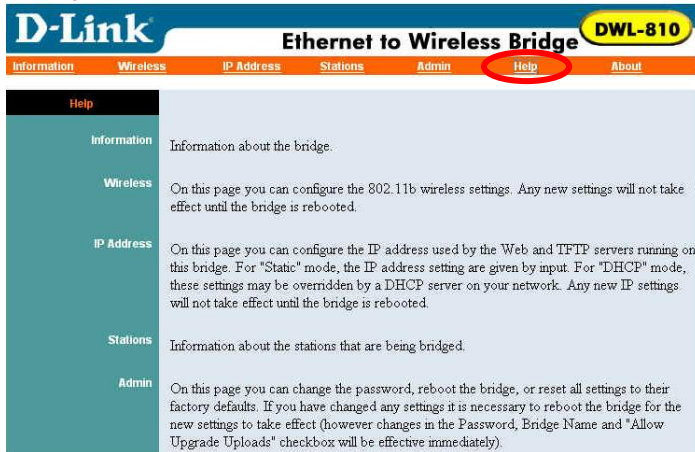


Fig. 6.8

Click on **Help** in the menu to see an explanation of the items in the Configuration menu.

About

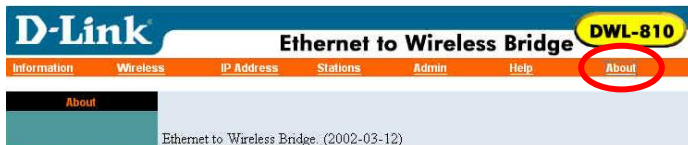


Fig. 6.9

Click on **About** in the menu to see the full name of the DWL-810.

7. Installation

After you have configured the DWL-810, or if you are using Ad-Hoc mode, you are ready to connect it to a network device to achieve wireless transmission.

1. Connect one end of a Straight-Through Ethernet Cat5 cable to the Ethernet port on the network device, and connect the other end of the cable to the Ethernet port on the DWL-810.
2. Turn on the power of the network device.

3. Turn on the power of the DWL-810 by connecting one end of the power adapter (included with your purchase) into the power port on the DWL-810, and connecting the other end into the AC power outlet on your wall.
4. The DWL-810 will automatically detect the MAC address of the network device to which it is connected, and begin wireless transmission to other wireless-enabled devices.

8. Troubleshooting

This section provides solutions to situations that can occur during the installation and operation of the DWL-810 Wireless Client. Read the following descriptions if you are having problems.

1. The DWL-810 Wireless Client Power light is not on.

- Check to see if the DWL-810 Wireless Client's power adapter is connected properly to a known good power outlet.

2. The DWL-810 Wireless Client Link light is not on.

- Make sure that the Ethernet cable is connected properly and your Ethernet adapter supports 10BaseT.

Advanced Setup (optional)

For advanced setup features, enter <http://192.168.0.30> into your Internet browser and gain access to the web configuration of the DWL-810. The advanced setup features can be used to change the LAN and wireless settings for your DWL-810 Wireless Client.

3. I cannot connect to another wireless client.

- The DWL-810 Wireless Client has a default SSID of **default**. Make sure that the SSID on the DWL-810 Wireless Client is exactly the same as the SSID on the other wireless client.
- The DWL-810 Wireless client has a default channel of **6**. Make sure that the channel on the DWL-810 Wireless client is exactly the same as the channel on the other wireless client.

4. I cannot connect to an access point or wireless router.

- The DWL-810 Wireless Client has a default wireless setting of **Ad-hoc**. If you are connecting to an access point or wireless router you will need to change that setting to **Infrastructure**. (See *Web Configuration* in this manual.)

9. 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**

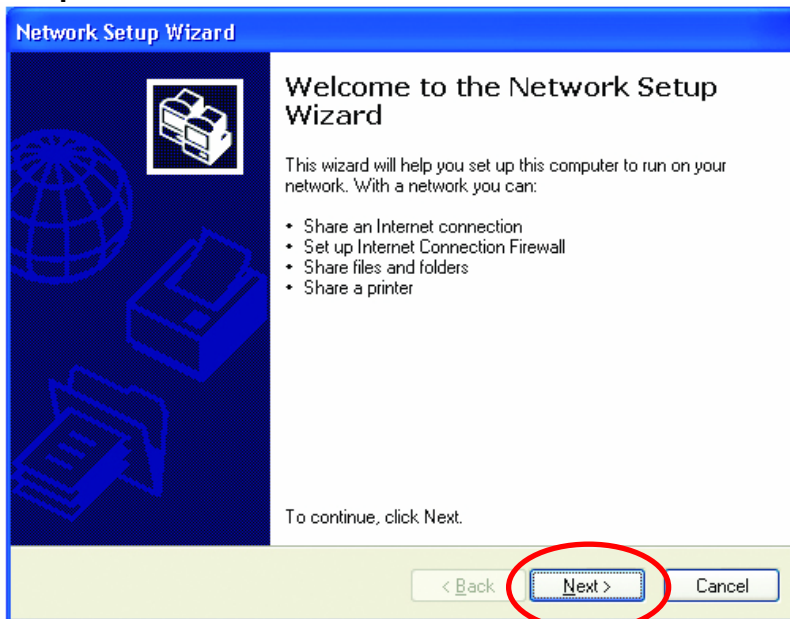


Fig. 9.1

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

Networking Basics

Using the Network Setup Wizard in Windows XP

Please follow all the instructions in this window:

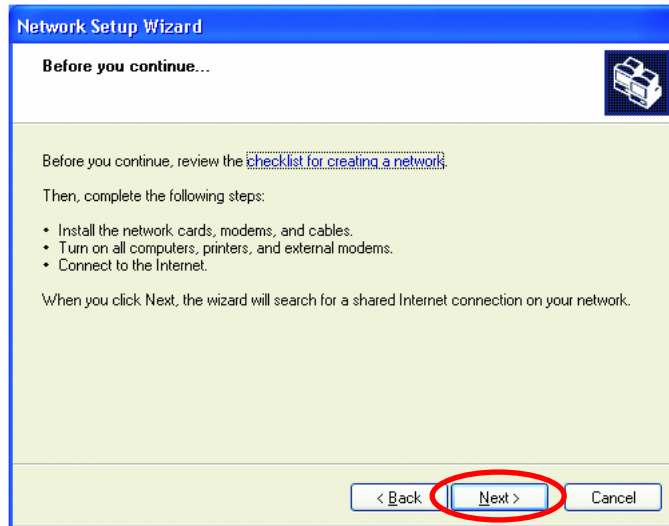


Fig. 9.2

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.

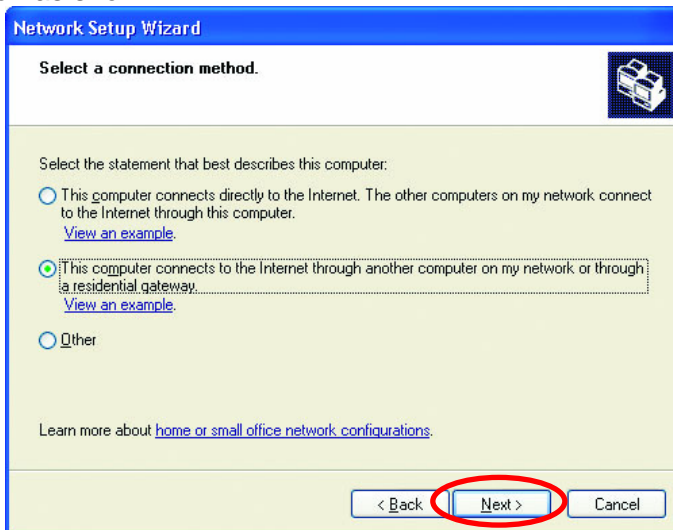
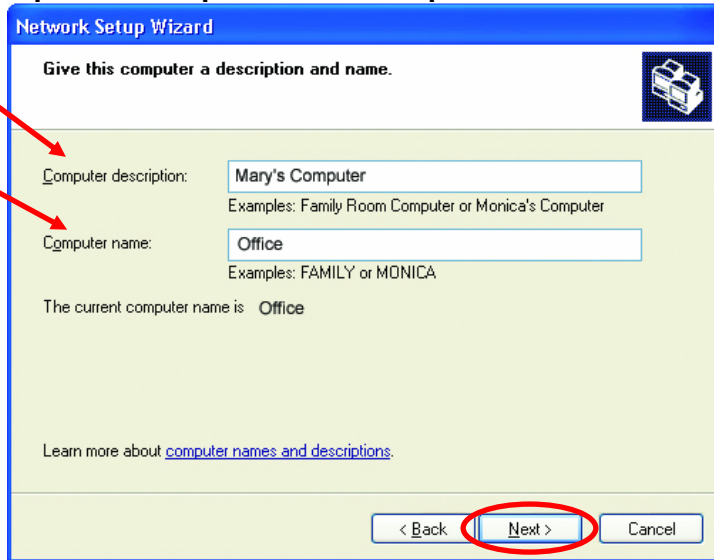


Fig. 9.3

Click **Next**

Networking Basics

Enter a **Computer description** and a **Computer name**.

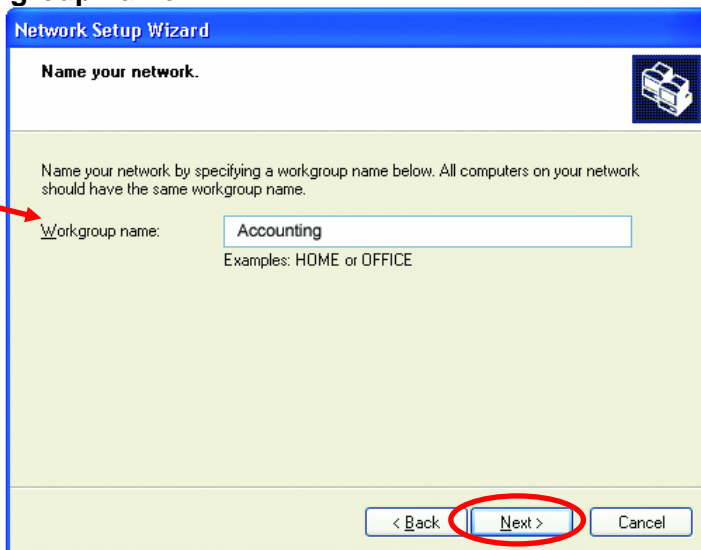


The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' The window contains two text input fields: 'Computer description:' with the value 'Mary's Computer' and 'Computer name:' with the value 'Office'. Below the 'Computer name' field, it says 'The current computer name is Office'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. Two red arrows point to the 'Computer description' and 'Computer name' fields.

Fig. 9.4

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.' The window contains a text input field for 'Workgroup name:' with the value 'Accounting'. Below the field, it says 'Examples: HOME or OFFICE'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. A red arrow points to the 'Workgroup name' field.

Fig. 9.5

Click **Next**

Networking Basics

Please wait while the wizard applies the changes.

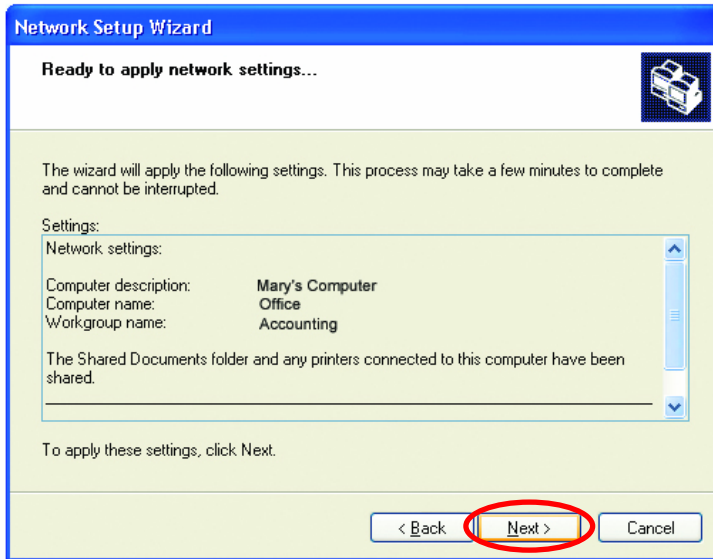


Fig. 9.6

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

Please wait while the wizard configures the computer.
This may take a few minutes.

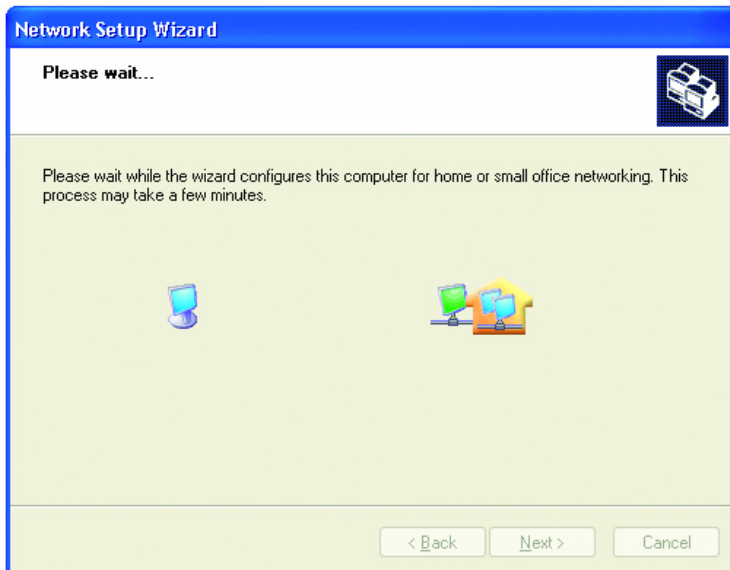


Fig. 9.7

Networking Basics

In the window below, select the best option. 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**.

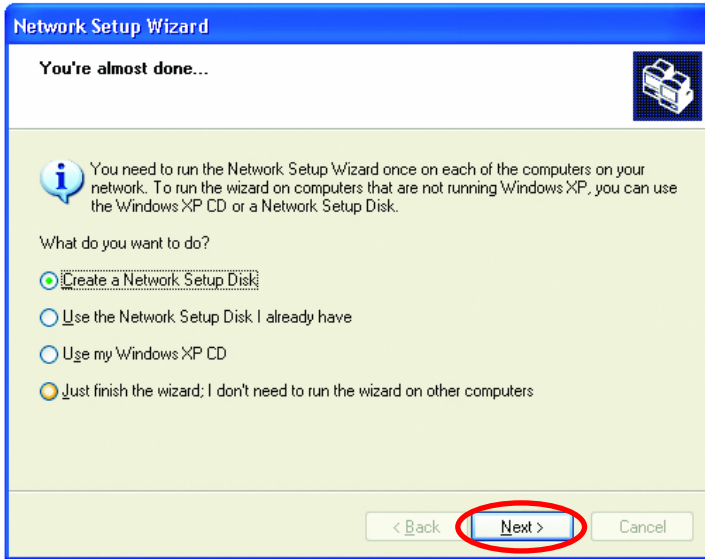


Fig. 9.8

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



Fig. 9.9

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

Networking Basics

Please wait while the wizard copies the files.



Fig. 9.10

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**

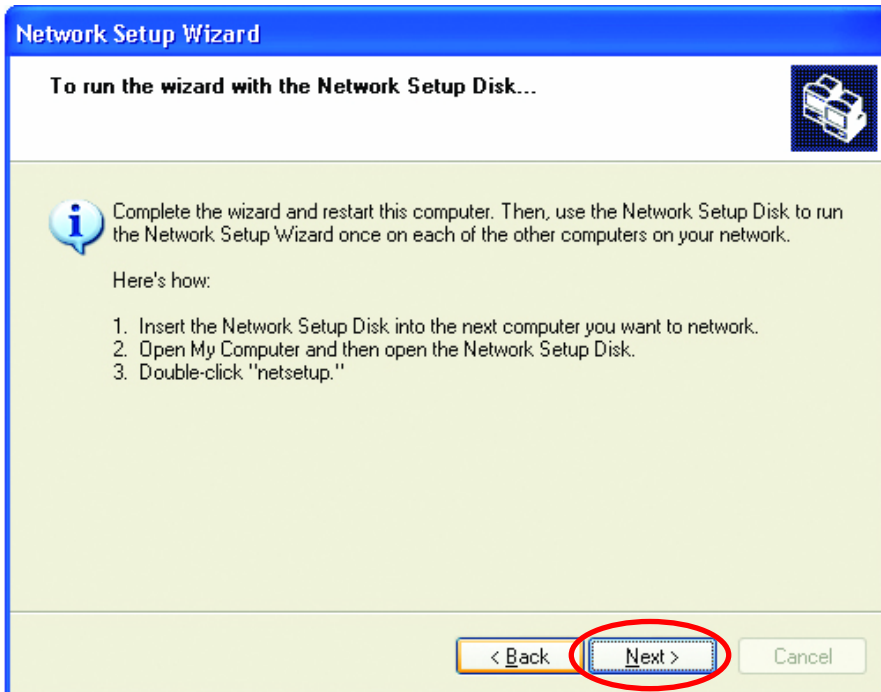


Fig. 9.11

Networking Basics

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

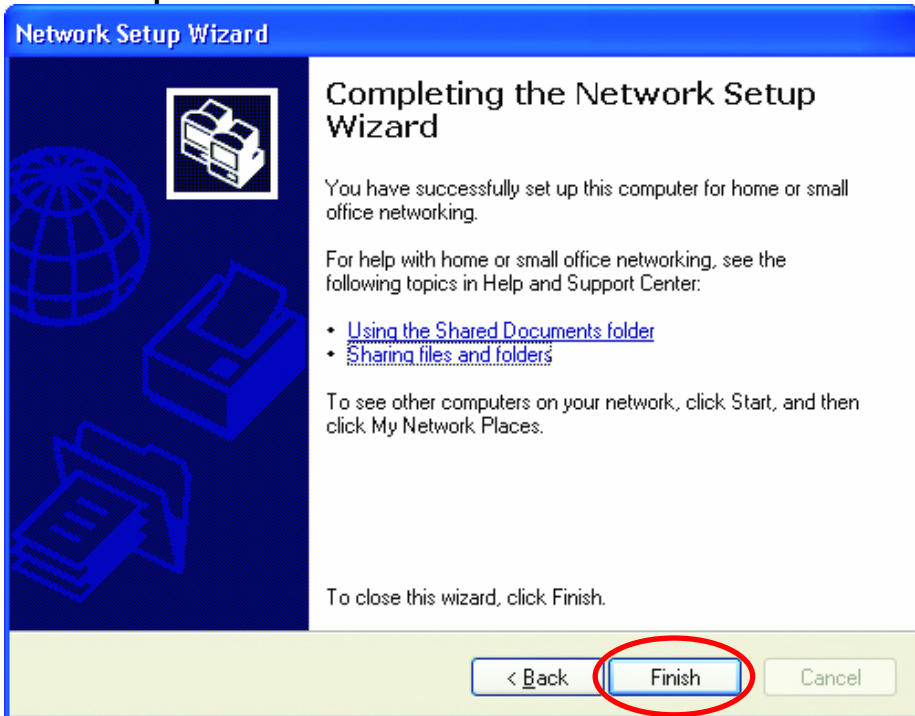


Fig. 9.12

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

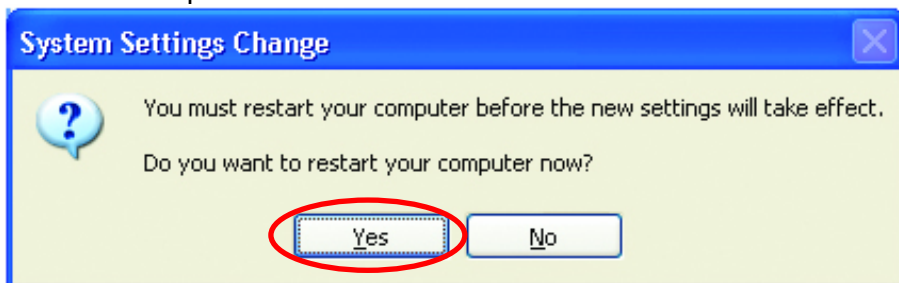


Fig. 9.13

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



Fig. 9.14

- 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 or join a domain,

- Click **Change**

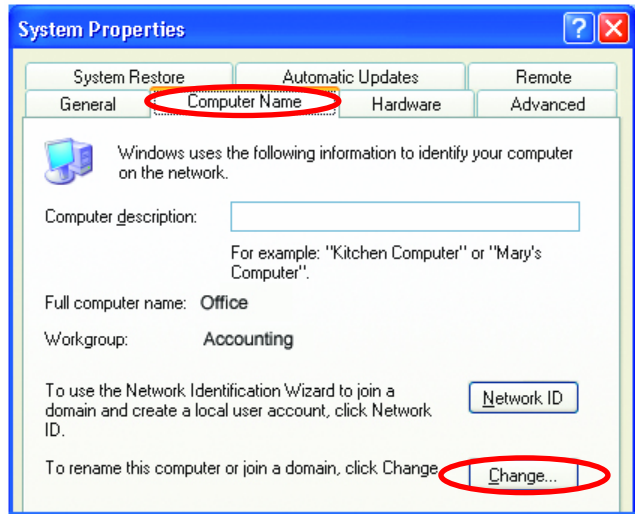


Fig. 9.15

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**

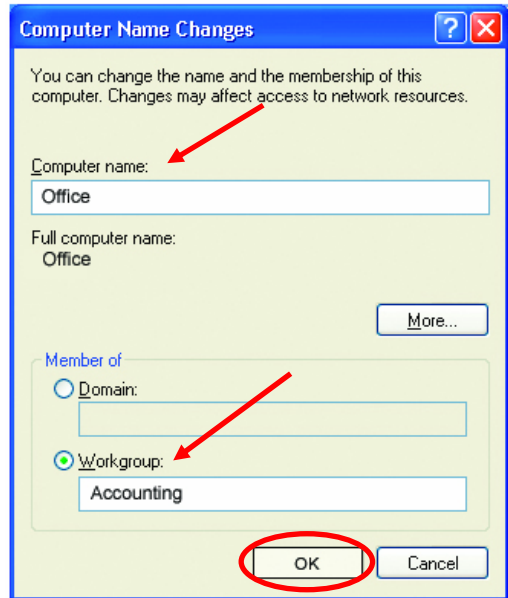


Fig. 9.16

Checking the IP Address in Windows XP/2000

Go to Start > All Programs > Accessories > Command Prompt

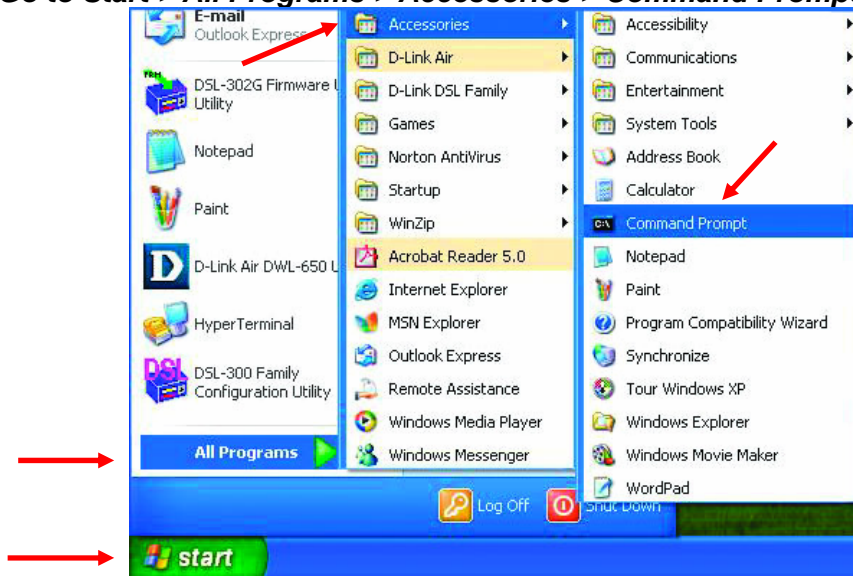
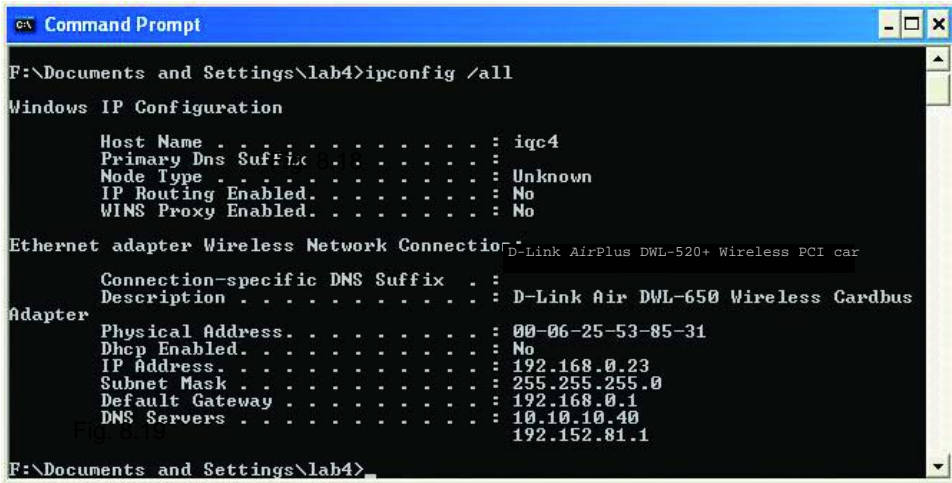


Fig. 9.17

Networking Basics

Checking the IP Address in Windows XP/2000

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



```
Command Prompt
F:\Documents and Settings\lab4>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : iqc4
    Primary Dns Suffix . . . . . : 
    Node Type . . . . . : Unknown
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

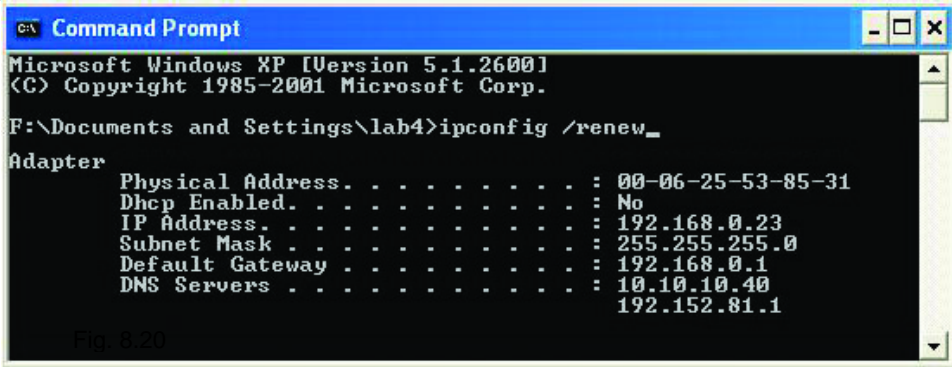
Ethernet adapter Wireless Network Connection 2:

    Connection-specific DNS Suffix . . . . . : 
    Description . . . . . : D-Link Air DWL-650 Wireless Cardbus
    Adapter Physical Address. . . . . : 00-06-25-53-85-31
    Dhcp Enabled. . . . . : No
    IP Address. . . . . : 192.168.0.23
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1
    DNS Servers . . . . . : 10.10.10.40
                          192.152.81.1

F:\Documents and Settings\lab4>
```

Fig. 9.18

Type **ipconfig /renew** at the prompt to get a new IP Address, shown below.



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab4>ipconfig /renew

Adapter

    Physical Address. . . . . : 00-06-25-53-85-31
    Dhcp Enabled. . . . . : No
    IP Address. . . . . : 192.168.0.23
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1
    DNS Servers . . . . . : 10.10.10.40
                          192.152.81.1

F:\Documents and Settings\lab4>
```

Fig. 9.19

(Windows 98/ME users: go to **Start > Run**. Type **Command**. Type **wiipcfg** at the prompt. Click **Release All** and **Renew All** to obtain a new IP Address.)

Networking Basics

Assigning a Static IP Address

Note: Residential Gateways/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 Gateway/Router you will not need to assign Static IP Addresses. If you are not using a DHCP capable Gateway/Router, or you need to assign a Static IP Address, please follow these instructions:

- Go to **Start**
- Click on **Control Panel**

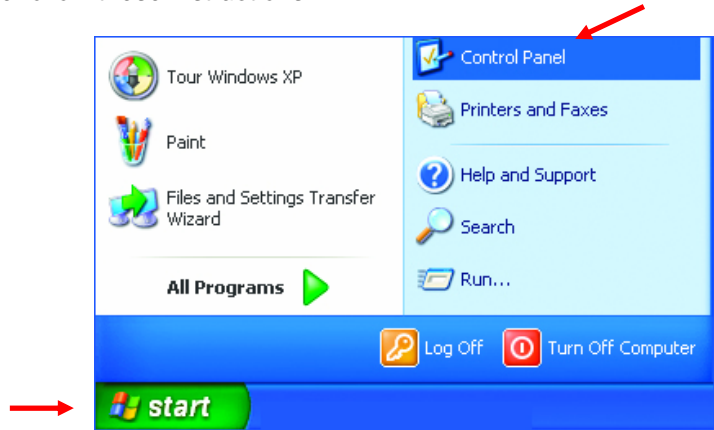


Fig. 9.20

- Select **Network and Internet Connections**

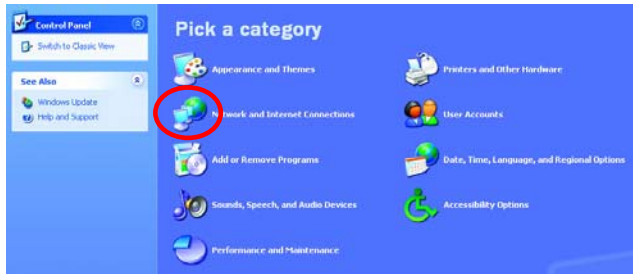


Fig. 9.21

- Select **Network Connections**

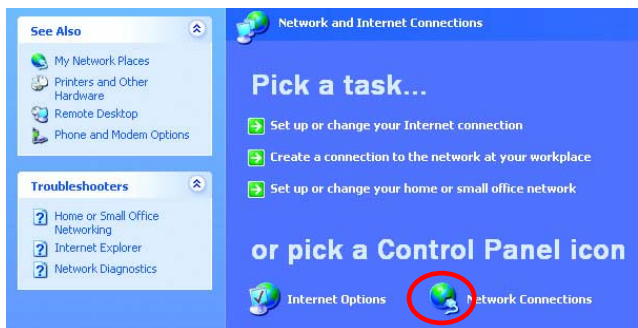


Fig. 9.22

Networking Basics

Assigning a Static IP Address

Note: The following examples are for illustration purposes only. Your network adapters and IP Addresses may differ, but the basic procedures remain the same.

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

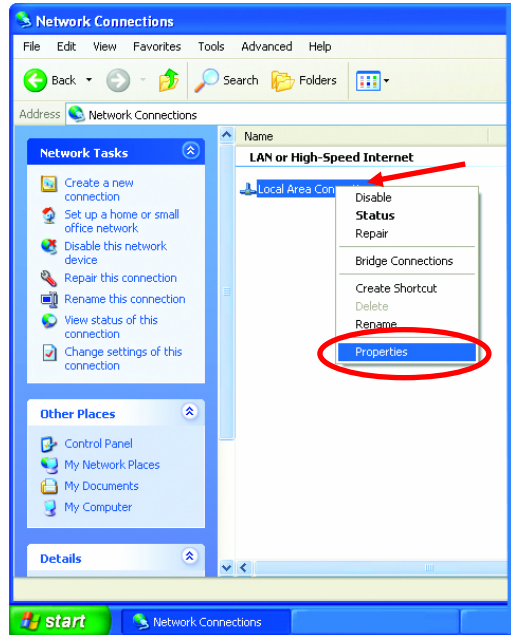


Fig. 9.23

- Highlight **Internet Protocol (TCP/IP)**
- Click **Properties**

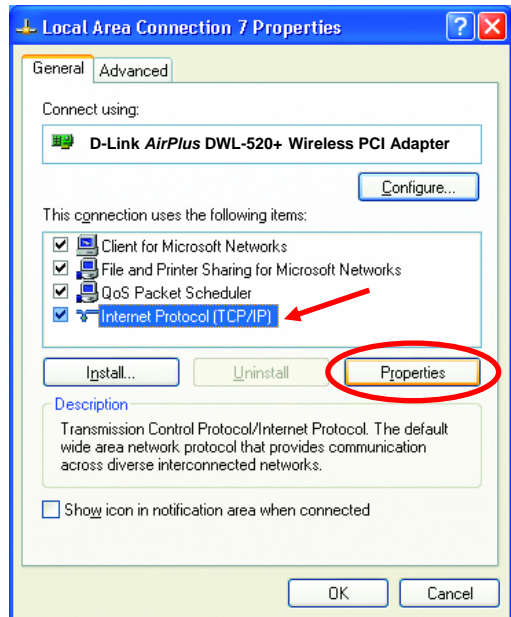


Fig. 9.24

Networking Basics

Assigning a Static IP Address

- Select **Use the following IP address** in the **Internet Protocol (TCP/IP) Properties** window,
- 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 between 192.168.0.3 and 192.168.0.254. No two computers can have the same IP Address. The subnet mask must be the same for all the computers on the network.)
- Input your **DNS server address only if you plan to use the Internet**. (**Note: If you are entering a DNS server address, you must also enter the IP Address of the Default Gateway.**)

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

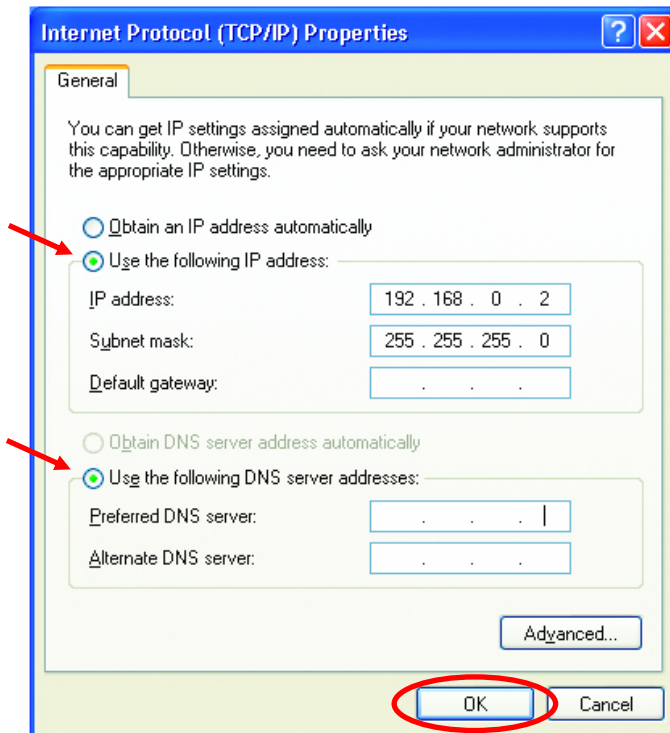


Fig. 9.25

- Click **OK**

You have completed the assignment of a Static IP Address. *(You do not need to assign a Static IP Address if you have a DHCP-capable Gateway/Router.)*

Networking Basics

Connecting to a Wireless Network in Windows XP

Following are some examples using a DWL-650 Wireless Cardbus Adapter, you may be using different wireless network adapters and different IP Addresses, but the procedure for connection will be the same.

To be able to connect to a wireless network, make sure the proper network settings are configured for the network adapter.

Go to **Start > right-click on My Network Places > select Properties > double-click on the Wireless Network Connection associated with the DWL-650 > select Properties > select Internet Protocol (TCP/IP) > click Properties**

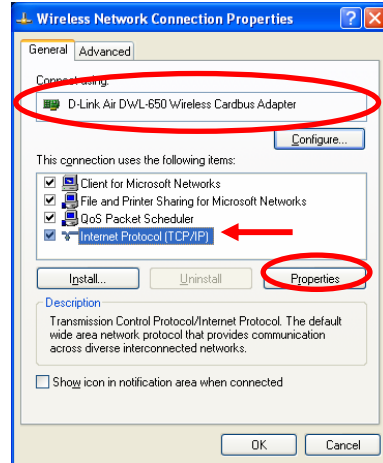


Fig. 9.26

Connecting to a Wireless Network with a Wireless Router or an Access Point using a DHCP server in Windows XP.

Select **Obtain an IP address automatically** - if the Wireless Router or Access Point has DHCP server enabled

Select **Obtain DNS server address automatically**.

Click **OK**

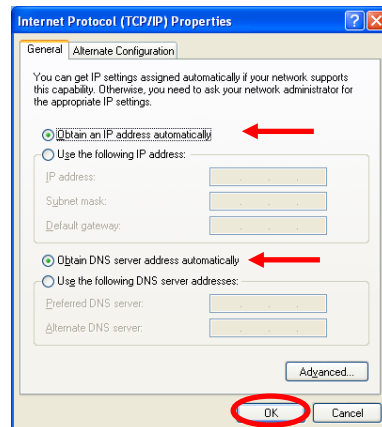


Fig. 9.27

Networking Basics

Connecting to a Wireless Network

Connecting to a Wireless Network with a Wireless Router or an Access Point using a static IP address in Windows XP.

Select **Use the following IP address** - if the Wireless Router or Access Point **does not** have a DHCP server enabled.

Input a static IP address within the same range as the Wireless Router or Access Point.

IP address: 192.168.0.51
Subnet mask: 255.255.255.0
Default Gateway: Enter the LAN IP address of the Wireless Router

Select **Use the following DNS server address**. Enter the LAN IP address of the Wireless Router.
Click **OK**

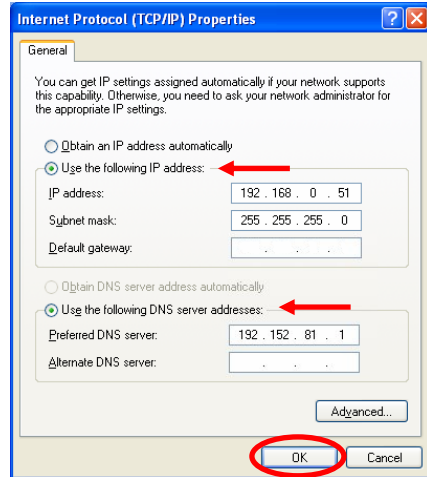


Fig. 9.28

Connecting to a Wireless Network in Windows 2000

Go to **Start > Settings > Network and Dial-up Connections** > Double click on the **Local Area Connection** associated with the DWL-650 > select **Properties** > select **Internet Protocol (TCP/IP)** > click **Properties**

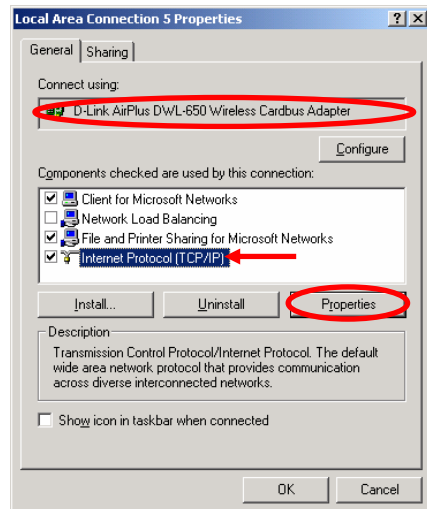


Fig. 9.29

Networking Basics

Connecting to a Wireless Network

Connecting to a Wireless Network with a Wireless Router or an Access Point using a DHCP server in Windows 2000.

Select **Obtain an IP address automatically**.

Select **Obtain DNS server address automatically**.

Click **OK**

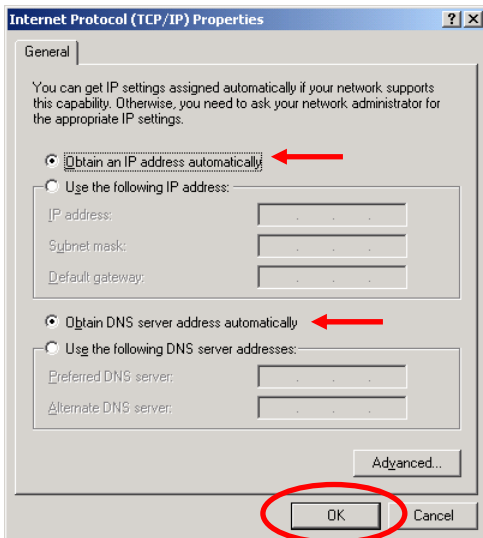


Fig. 9.30

Connecting to a Wireless Network with a Wireless Router or an Access Point using a static IP address in Windows 2000.

Select **Use the following IP address**

Input a static IP Address within the same IP Address range as the wireless router or the access point.

IP address: 192.168.0.51
Subnet mask: 255.255.255.0
Default Gateway: Enter the LAN IP address of the Wireless Router

Select **Use the following DNS server address**. Leave this section blank.

Click **OK**

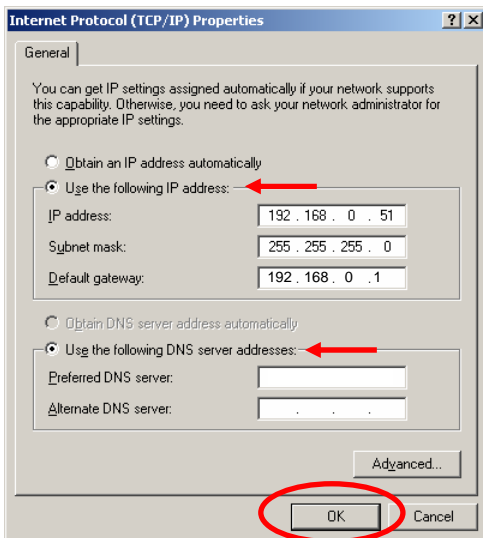


Fig 9.31

Networking Basics

Connecting to a Wireless Network

Connecting to a Wireless Network in Windows Me and 98

Go to **Start > Settings > Control Panel > Double-click on the Network associated with the DWL-650 > click Properties > select Internet Protocol (TCP/IP) > click Properties**

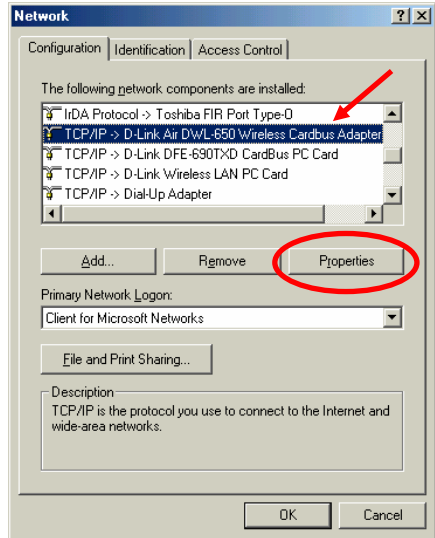


Fig. 9.32

Connecting to a Wireless Network with a Wireless Router or an Access Point using a DHCP server in Windows Me and 98.

Select the **IP Address** tab. Then, select **Obtain an IP address automatically.**

Select **Detect connection to network media.**

Click **OK**

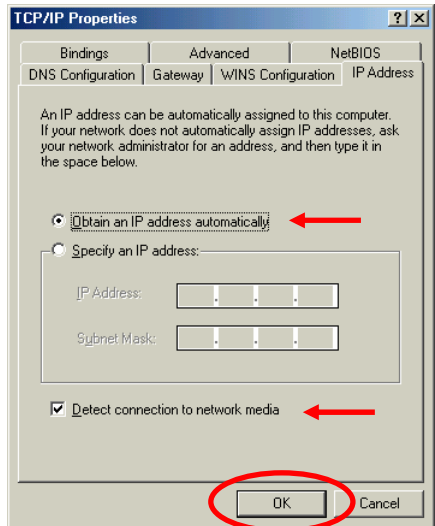


Fig. 9.33

Networking Basics

Connecting to a Wireless Network

Connecting to a Wireless Network with a Wireless Router or Access Point using a static IP address in Windows Me or Windows 98.

Select **Use the following IP address.**

Input a static IP address within the same IP Address range as the wireless router or access point.

IP address: 192.168.0.51
Subnet mask: 255.255.255.0

Select **Detect connection to network media.**

Click **OK**

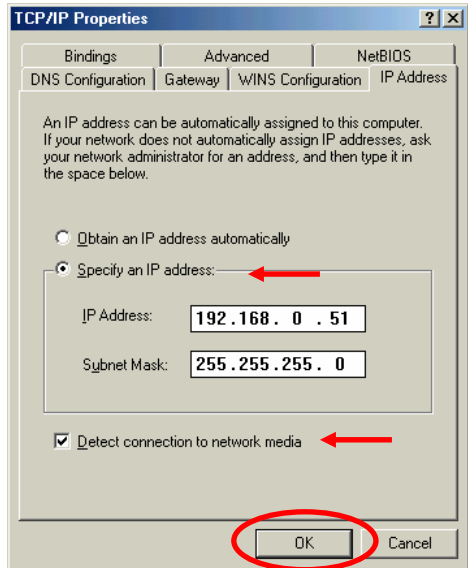


Fig. 9.34

Checking the Wireless Connection by Pinging For Windows XP and 2000:

Go to **Start > Run > type cmd.** A window similar to Fig. 8.35 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.

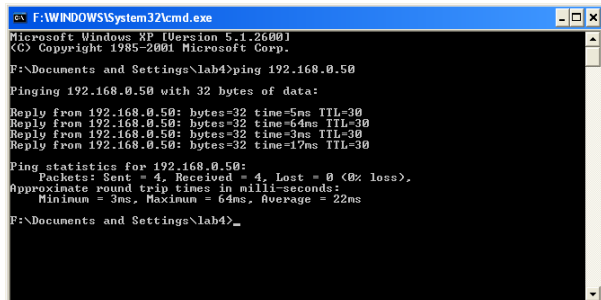


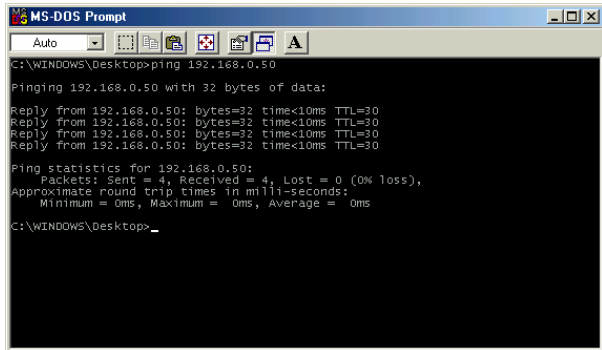
Fig. 9.35

Networking Basics

Checking the Wireless Connection by Pinging

For Windows Me and 98:

Go to **Start > Run > type command**. A window similar to *Fig. 8.36* 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.



```
MS-DOS Prompt
Auto
C:\WINDOWS\Desktop>ping 192.168.0.50
Pinging 192.168.0.50 with 32 bytes of data:
Reply from 192.168.0.50: bytes=32 time<10ms TTL=30
Reply from 192.168.0.50: bytes=32 time<10ms TTL=30
Reply from 192.168.0.50: bytes=32 time<10ms TTL=30
Reply from 192.168.0.50: bytes=32 time<10ms TTL=30
Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milliseconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\WINDOWS\Desktop>
```

Fig. 9.36

Adding and Sharing Printers in Windows XP

After you have run the **Network Setup Wizard** on all the computers in your network (please see the **Network Setup Wizard** section at the beginning of **Networking Basics**), you can use the **Add Printer Wizard** to add or share a printer on your network.

Whether you want to add a **local printer** (a printer connected directly to one computer,) share an **LPR printer** (a printer connected to a print server) or share a **network printer** (a printer connected to your network through a Gateway/Router,) use the **Add Printer Wizard**. Please follow the directions below:

First, make sure that you have run the Network Setup Wizard on all of the computers on your network.

We will show you 3 ways to use the **Add Printer Wizard**

1. **Adding a local printer**
2. **Sharing an network printer**
3. **Sharing an LPR printer**

Networking Basics

Adding a local printer

(A printer connected directly to a computer)

A printer that is not shared on the network and is connected directly to one computer is called a **local printer**. If you do not need to share your printer on a network, follow these directions to add the printer to one computer.

- Go to **Start> Printers and Faxes**



Fig. 9.37

- Click on **Add a printer**

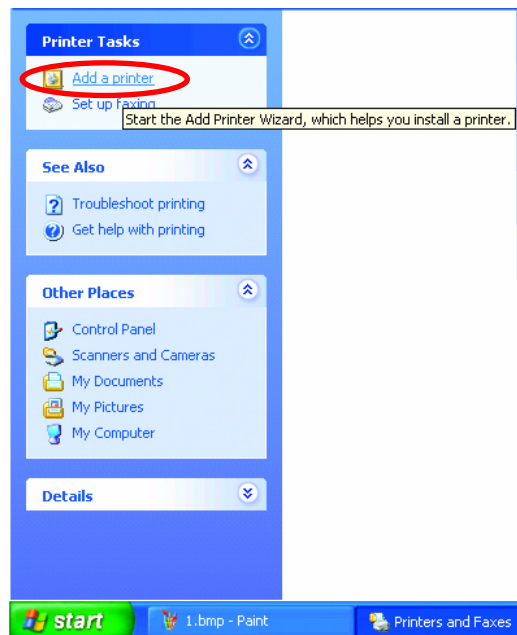


Fig. 9.38

Networking Basics

Adding a local printer

- Click **Next**

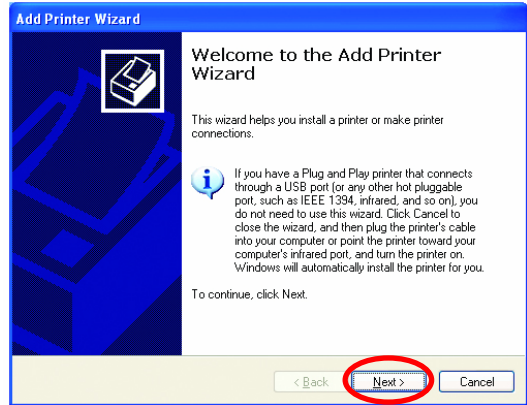


Fig. 9.39

- Select **Local printer attached to this computer**
- *(Deselect **Automatically detect and install my Plug and Play printer** if it has been selected.)*



- Click **Next**

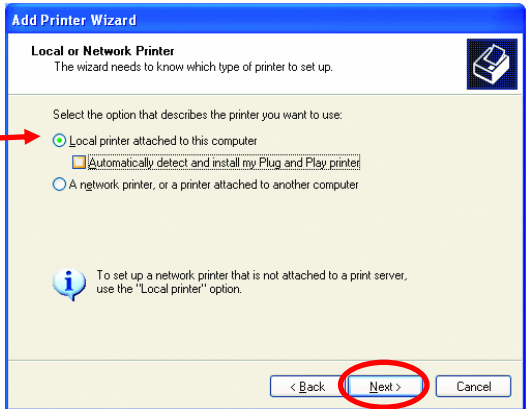


Fig. 9.40

- Select **Use the following port:**
- From the pull-down menu **select the correct port** for your printer



*(Most computers use the **LPT1:** port, as shown in the illustration.)*

- Click **Next**

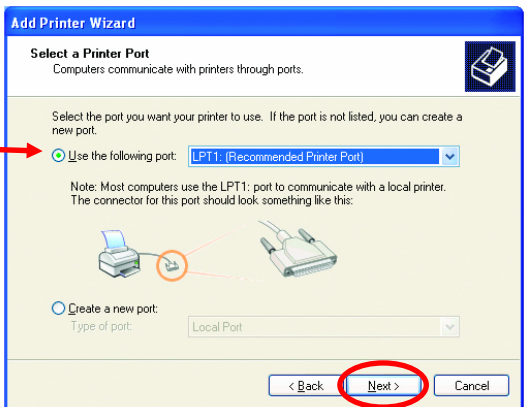


Fig. 9.41

Networking Basics

Adding a local printer

- Select and highlight the correct driver for your printer.
- Click **Next**

*(If the correct driver is not displayed, insert the CD or floppy disk that came with your printer and click **Have Disk.**)*

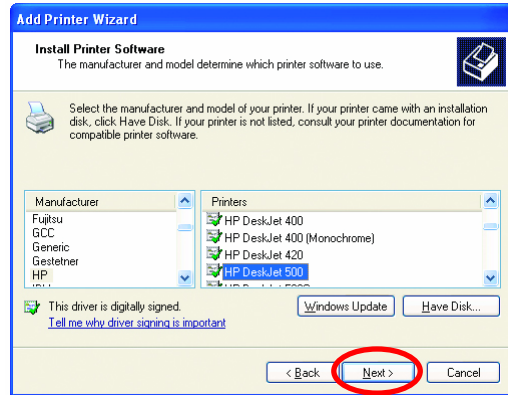


Fig. 9.42

- At this screen, you can change the name of the printer (optional.)

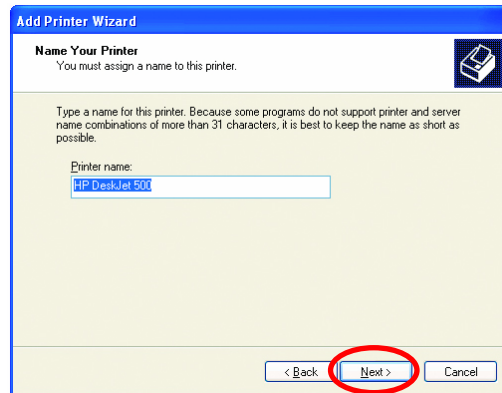


Fig. 9.43

- Click **Next**
- Select **Yes**, to print a test page. A successful printing will confirm that you have chosen the correct driver.
- Click **Next**

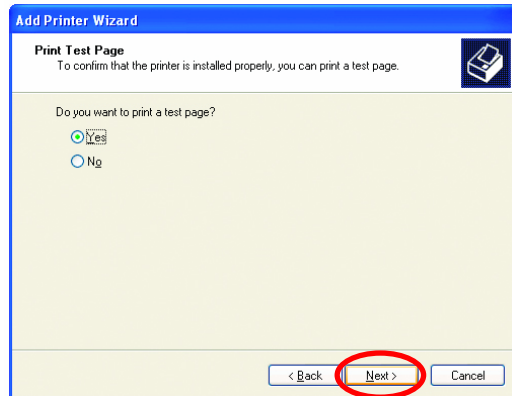


Fig. 9.44

Networking Basics

Adding a local printer

This screen gives you information about your printer.

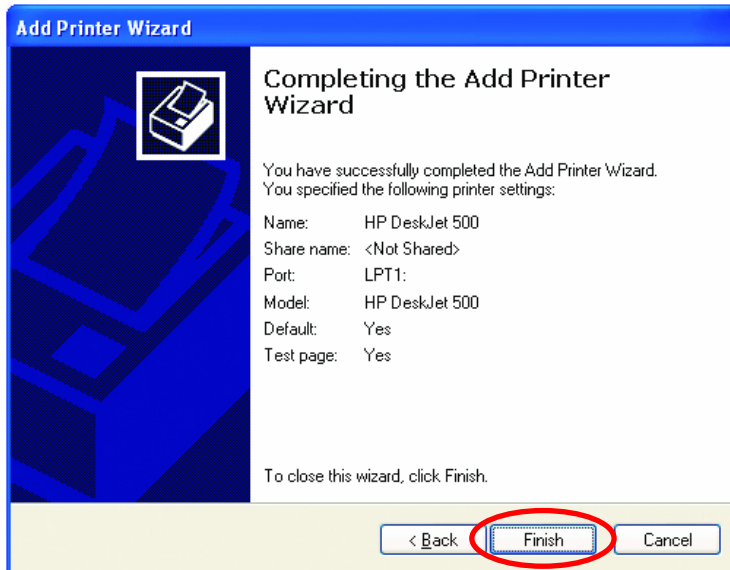


Fig. 9.45

Click **Finish**

When the test page has printed,

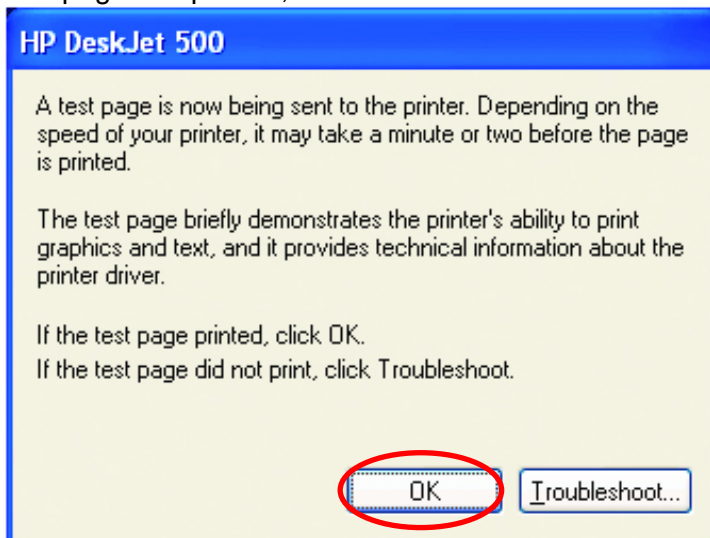


Fig. 9.46

Click **OK**

Networking Basics

Adding a local printer

- Go to **Start> Printers and Faxes**

A successful installation will display the printer icon as shown at right.

You have successfully added a local printer.

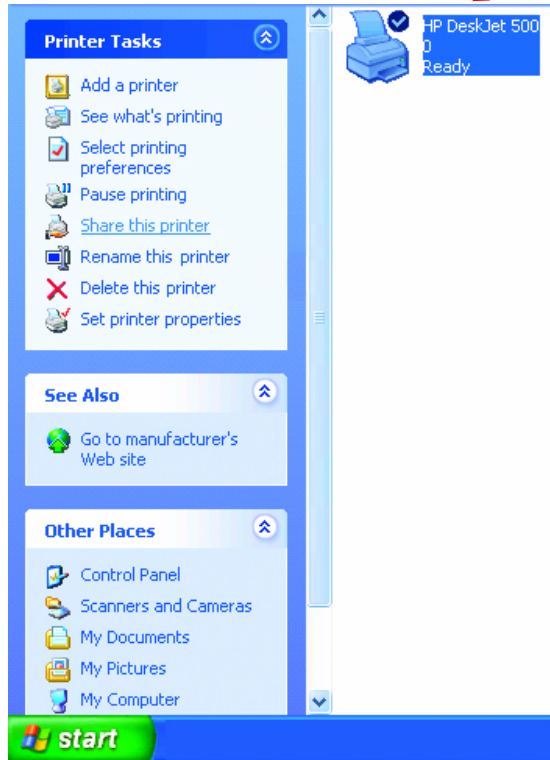


Fig. 9.47

Sharing a Network Printer

After you have run the **Network Setup Wizard** on all the computers on your network, you can run the **Add Printer Wizard** on all the computers on your network. Please follow these directions to use the **Add Printer Wizard** to share the printer on your network:

- Go to **Start> Printers and Faxes**



Fig. 9.48

Networking Basics

Sharing a network printer

- Click on **Add a Printer**

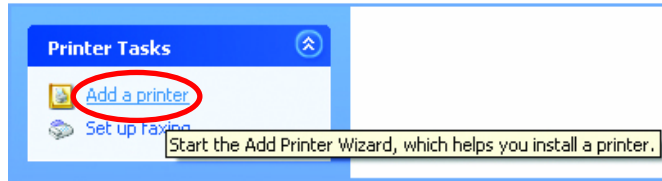


Fig. 9.49

- Click **Next**

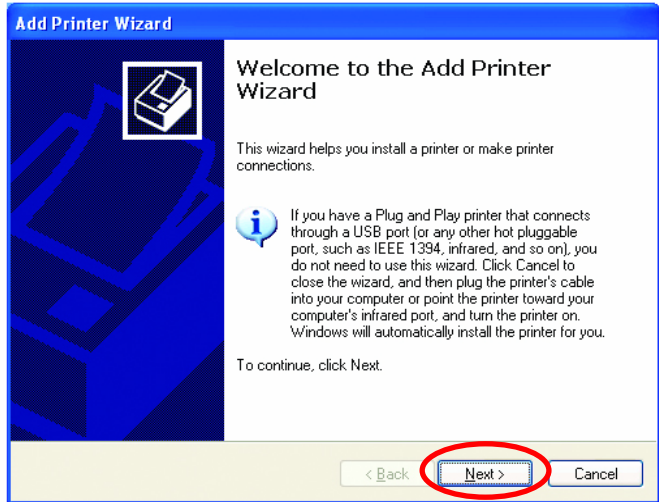


Fig. 9.50

- Select **Network Printer**

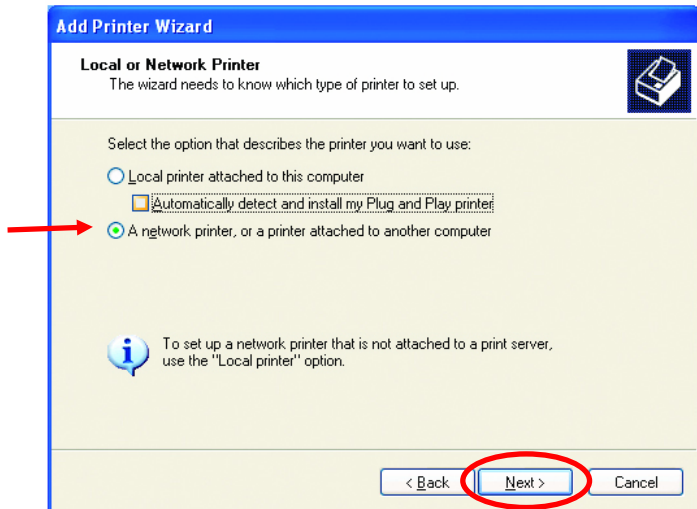


Fig. 9.51

- Click **Next**

Networking Basics

Sharing a network printer

- Select **Browse for a printer**

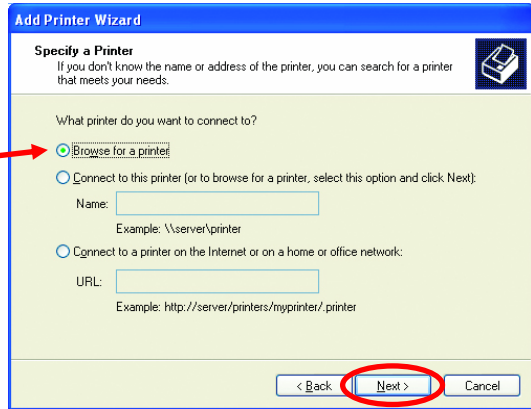


Fig. 9.52

- Click **Next**

- Select the printer you would like to share.

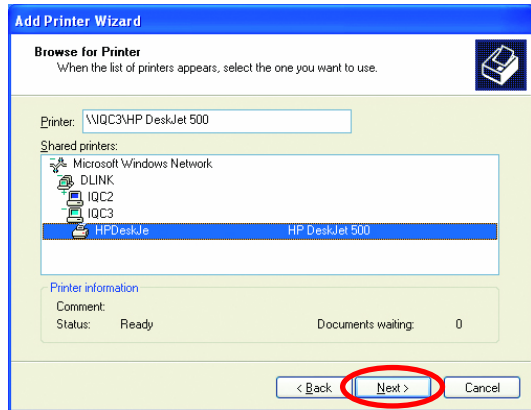


Fig. 9.53

- Click **Next**

- Click **Finish**



Fig. 9.54

Networking Basics

Sharing a network printer

To check for proper installation:

- Go to **Start > Printers and Faxes**

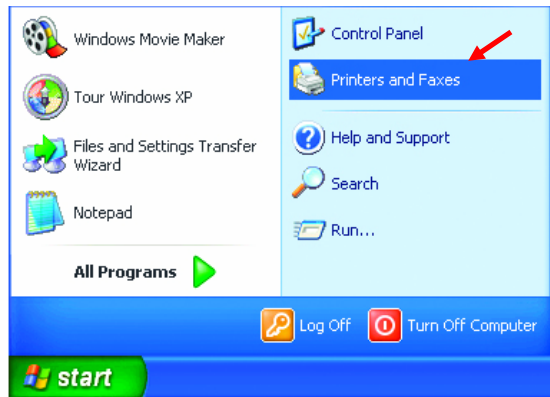


Fig. 9.55

The printer icon will appear at right, indicating proper installation.

You have completed adding the printer.

To share this printer on your network:

- Remember the **printer name**
- Run the **Add Printer Wizard** on all the computers on your network.
- Make sure you have already run the **Network Setup Wizard** on all the network computers.

After you run the **Add Printer Wizard** on all the computers in the network, you can share the printer.

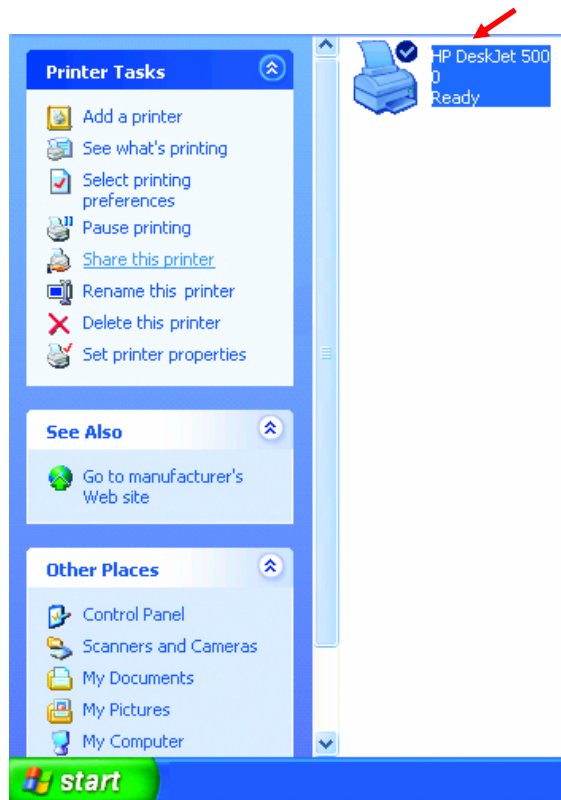


Fig. 9.56

Networking Basics

Sharing an LPR printer

To share an **LPR printer** (using a print server,) you will need a **Print Server** such as the **DP-101P+**. Please make sure that you have run the **Network Setup Wizard** on all the computers on your network. To share an **LPR printer**, please follow these directions:

- Go to **Start> Printers and Faxes**
- Click on **Add a Printer**

The screen to the right will display.

- Click **Next**

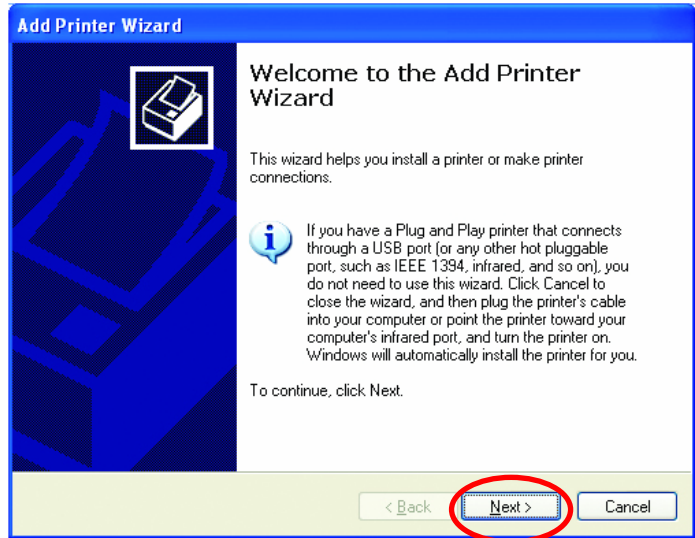


Fig. 9.57

- Select **Local Printer**

- Click **Next**

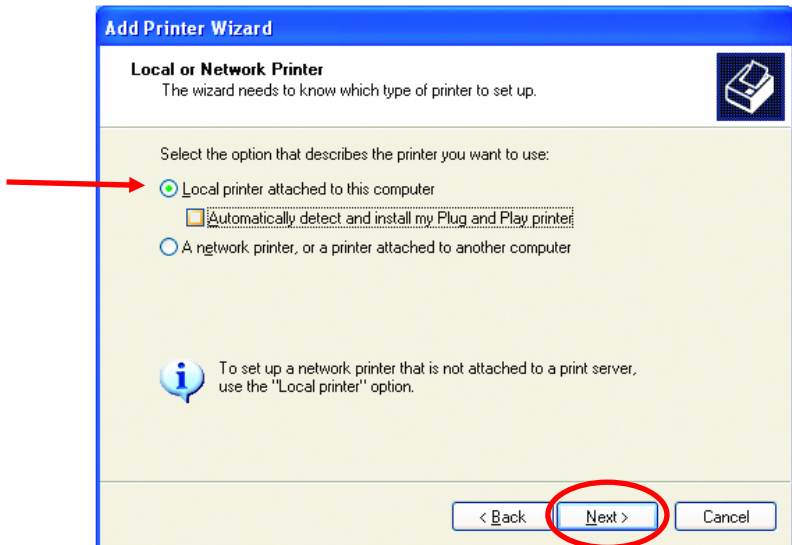


Fig. 9.58

Networking Basics

Sharing an LPR printer

- Select **Create a new port**
- From the pull-down menu, select **Standard TCP/IP Port**, as shown.

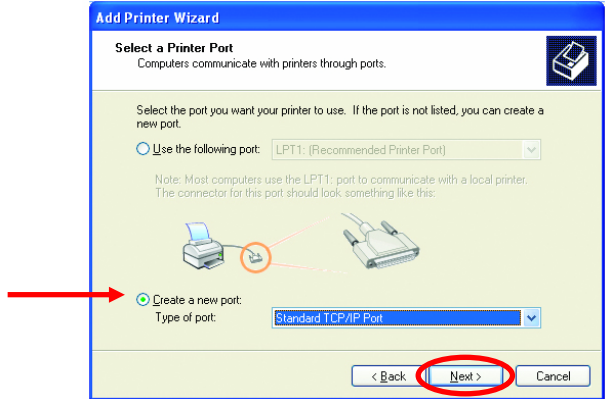


Fig. 9.59

- Please read the instructions on this screen.

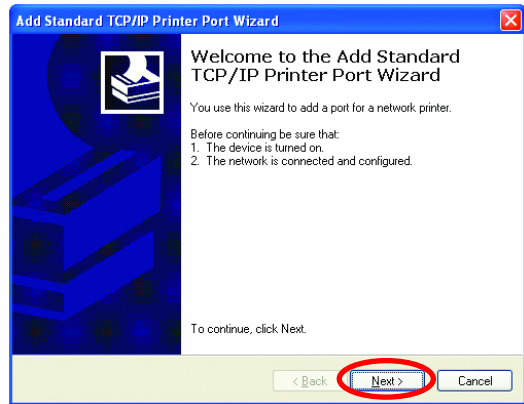


Fig. 9.60

- Click **Next**

- Enter the **Printer IP Address** and the **Port Name**, as shown.

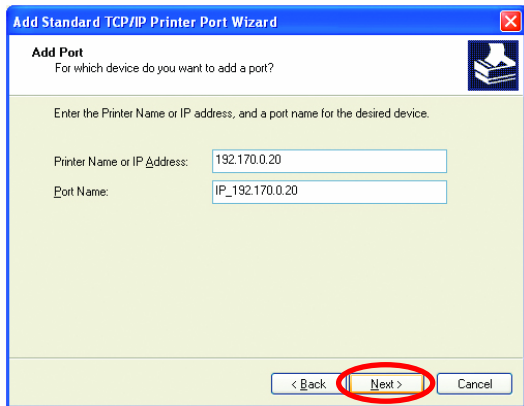


Fig. 9.61

- Click **Next**

Networking Basics

Sharing an LPR printer

- In this screen, select **Custom**.

- Click **Settings**

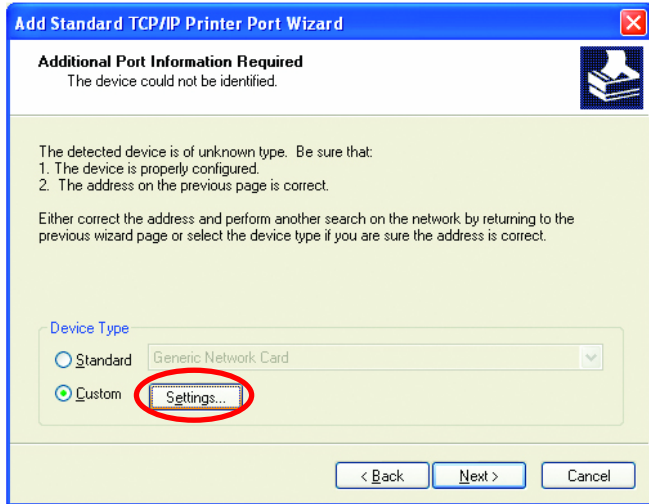


Fig. 9.62

- Enter the **Port Name** and the **Printer Name or IP Address**.

- Select **LPR**

- Enter a **Queue Name**. If there is more than one port on the print server, you must name the **Queue**.

- Click **OK**

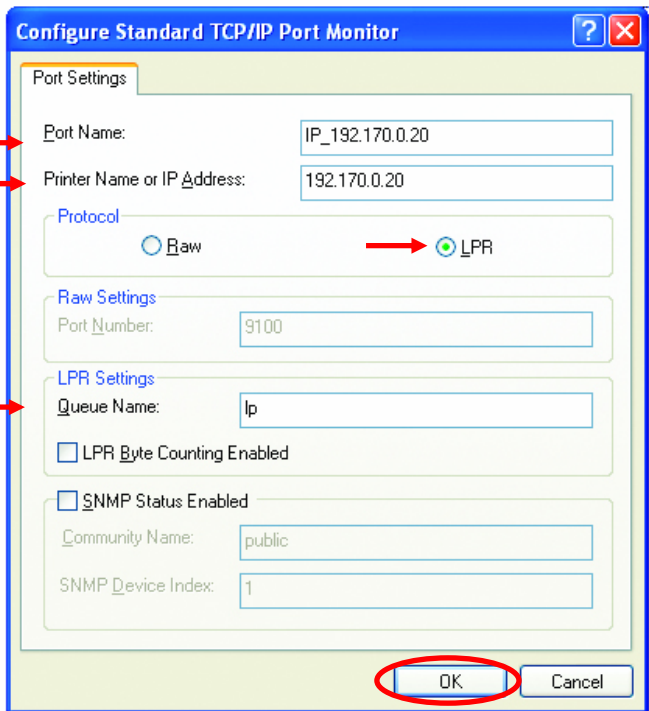


Fig. 9.63

Networking Basics

Sharing an LPR printer

- This screen will show you information about your printer.
- Click **Finish**

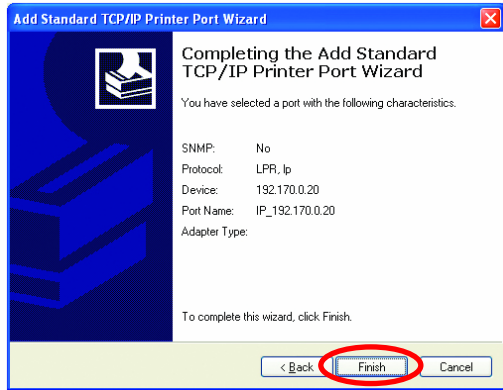


Fig. 9.64

- Select the printer you are adding from the list of **Printers**.
- Insert the printer driver disk that came with your printer.
- Click **Have Disk**

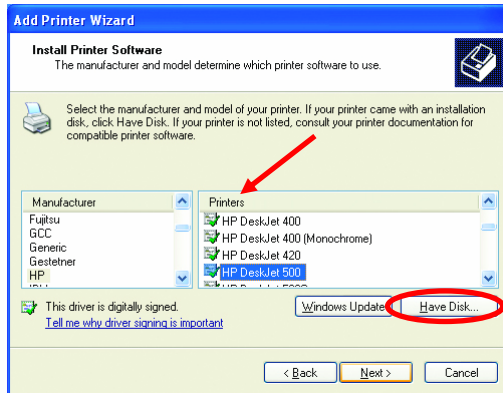


Fig. 9.65

If the printer driver is already installed,

- Select **Keep existing driver**
- Click **Next**

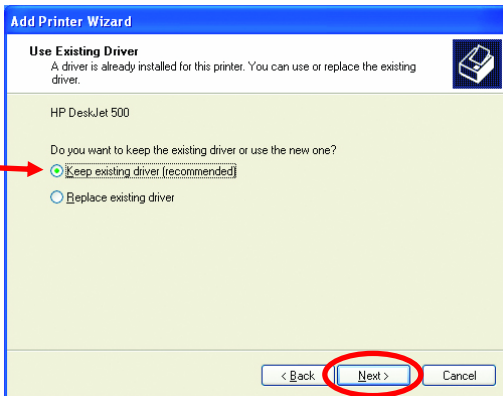


Fig. 9.66

Networking Basics

Sharing an LPR printer

- You can rename your printer if you choose. It is optional.

*Please remember the name of your printer. You will need this information when you use the **Add Printer Wizard** on the other computers on your network.*

- Click **Next**

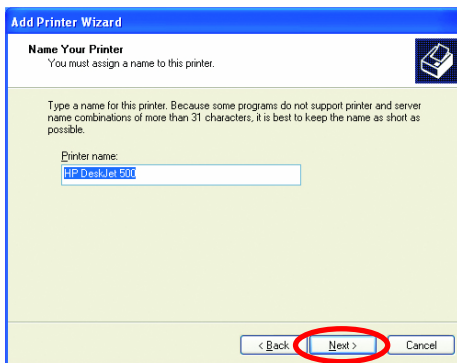


Fig. 9.67

- Select **Yes**, to print a test page.

- Click **Next**

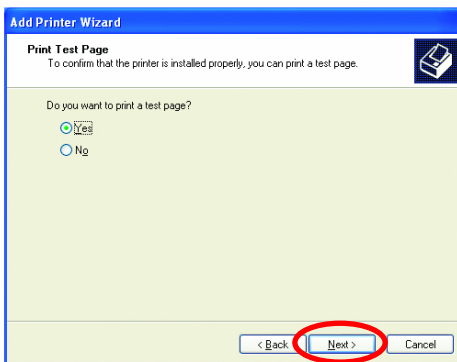


Fig. 9.68

This screen will display information about your printer.

- Click **Finish** to complete the addition of the printer.
- Please run the Add Printer Wizard on all the computers on your network in order to share the printer.

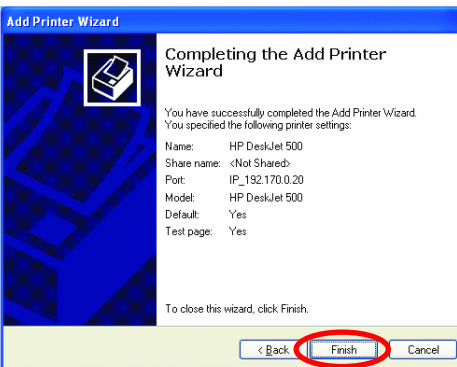


Fig. 9.69

*Note: You must run the **Network Setup Wizard** on all the computers on your network before you run the **Add Printer Wizard**.*

Networking Basics

Other Tasks

For help with other tasks in home or small office networking, see **Using the Shared Documents** folder and **Sharing files and folders** in the **Help and Support Center** in Microsoft Windows XP.

10. Technical Specifications

Standards:

- IEEE 802.11b
- IEEE 802.3 Ethernet
- Currently undergoing WiFi Certification

Adapter Type:

- IEEE 802.3 Ethernet to IEEE 802.11b Wireless

Supported Operating Systems:

- Windows XP
- Windows 2000
- Windows ME
- Windows 98

Data Security:

- 40-bit WEP (Wired Equivalent Privacy) Encryption
- 128-bit WEP (Wired Equivalent Privacy) Encryption

Data Rate: Mbps

- 11 : CCK
- 5.5 : CCK
- 2 : DQPSK
- 1 : DBSK

Range:

- Indoors – 115 to 328 feet (35 to 100 meters) per cell
- Outdoors – 328 feet to 984 feet (100 to 300 meters) per cell

Network Architecture:

- Supports Ad-Hoc Mode (Peer-to-Peer without Access Point) or Infrastructure Mode (Communications to wired networks via Access Points with Roaming)

Antenna:

- Internal Diversity Patch

Frequency Range:

- 2.4 – 2.4835 GHz, Direct Sequence Spread Spectrum (DSSS)

Transport Protocols:

- TCP/IP
- IPX/SPX
- NetBEUI
- NDIS

Physical Dimensions:

- L = 3.5 inches (90 mm)
- W = 3.2 inches (81.5 mm)
- H = 1.6 inches (40 mm)

Temperature:

- Operating Temperature: 14°F to 131°F (-10°C to 55°C)
- Storage Temperature: -4°F to 167°F (-20°C to 75°C)

Humidity:

- Maximum up to 95% Non-condensing

Emissions:

- FCC
- CE

TCP/IP Protocols:

- DHCP

Key Management:

- Automatic Dynamic Key Allocation (ADKA) through public key

Ports:

- One (1) 10Mbps RJ-45

Diagnostic LED:

- Power
- Link/Activity

Power Specifications:

- Operating Voltage: +5V 2A

Operating Channels:

- 1-11 United States (FCC)

Safety:

- UL

11. Contacting Technical Support

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

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

U.S. customers can contact D-Link technical support through our web site, or by phone.

D-Link Technical Support for customers in the United States:

(877) 453-5465

Monday through Friday 7:00am to 12:00am.

D-Link Technical Support over the Internet:

<http://support.dlink.com>

email: support@dlink.com

Tech Support for customers within Canada:

(800) 361-5265

Monday through Friday 8:30am to 9:00pm EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

email: support@dlink.ca

When contacting technical support, please provide the following information:

- *Serial number of the unit*
- *Model number or product name*
- *Software type and version number*

12. Limited Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for 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, or addresses with an APO or FPO.

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

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any 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, at its option, 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 or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual 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 ("Software 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 Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, 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 the portion of the actual purchase price paid that is attributable to the Software. 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. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. 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 portions 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, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- 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 and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. 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. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

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.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

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Governing Law: This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum of 20 cm (about 8 inches) between the radiator and your body.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

13. Registration



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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