

# **D-Link *AirPlus* DI-614+**

## **Enhanced 2.4 GHz Wireless Broadband Router**

### **Manual**

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# 1. Package Contents



## Contents of Package:

- **D-Link AirPlus DI-614+** Enhanced 2.4GHz Wireless Access Point
- Power Adapter – 5V DC, 2.5A
- Manual on CD
- Quick Installation Guide

*Note: Using a power supply with a different voltage rating than the one included with the DI-614+ 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 a 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* DI-614+ Wireless Broadband Router is an enhanced 802.11b high-performance, wireless router. It is an ideal way to extend the reach and number of computers connected to your wireless network.

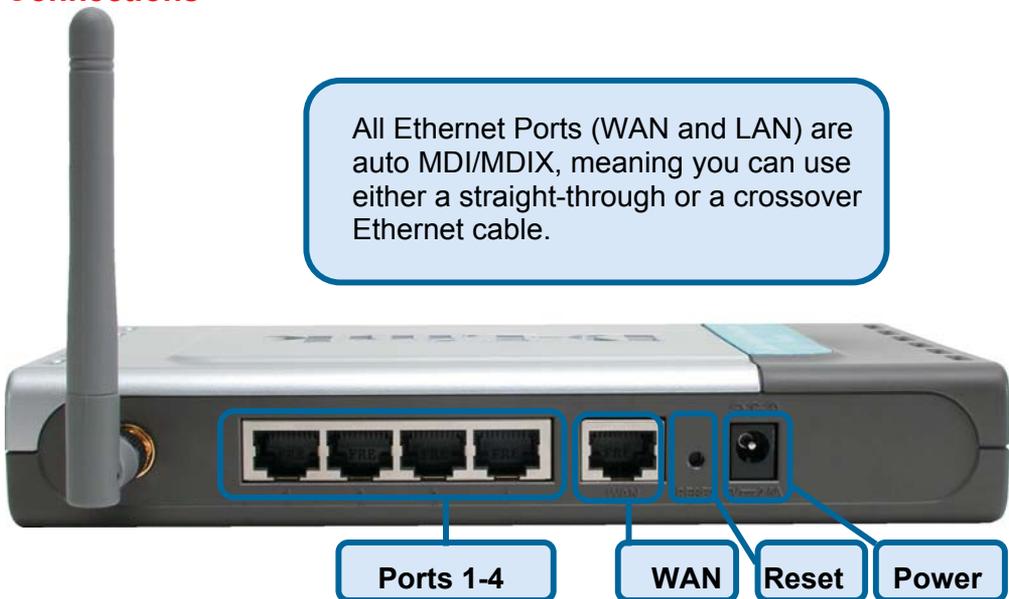
Unlike most 802.11b routers, the DI-614+ is capable of data transfer speeds up to 22 Mbps (compared to the standard 11 Mbps) when used with other D-Link *AirPlus* products such as the DWL-520+ Wireless PCI Adapter.

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 DI-614+ 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 Router 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 DI-614+.*

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



**Reset:** Used to restore the DI-614+ to the factory default settings

**Power:** Connect one end of the included power adapter into the power port and the other end into the power outlet.

**WAN:** WAN port socket (CAT5 Ethernet RJ-45 cable.) Connect to your Cable or DSL modem.

**PORTS 1-4:** LAN port sockets (CAT5 Ethernet RJ-45 cable.) Connect to Ethernet-enabled devices such as a hub, switch or network adapter-equipped computer in the local area network.

## Features and Benefits

- Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection
- Supports VPN pass-through, providing added security
- Advanced Firewall features
- DHCP server supported enables all networked computers to automatically receive IP addresses
- Up to 2x faster with other *AirPlus* products with speeds up to 22Mbps
- Web-based interface for Managing and Configuring
- Access Control to manage users on the network
- Supports special applications that require multiple connections
- Operates in the 2.4GHz frequency range
- Maximum reliability, throughput and connectivity with automatic data rate switching.
- Stronger network security with 256-bit encryption.

# LEDS

## AUTO-SENSING PORTS

All ports (both LAN and WAN) auto-sense cable types to accommodate straight-through or cross-over cable.

## M1 LED -

A solid light indicates that the DI-614+ is ready.

## M2 LED -

A solid light indicates that the unit is defective.

## WAN LED -

A solid light indicates connection on the WAN port. This LED blinks during data transmission.



## POWER LED -

A solid light indicates a proper connection to the power supply.

## WLAN LED -

A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.

## LOCAL

## NETWORK LED -

A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.

### 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 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 (continued)

**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 Router and Access Point (DI-614+,DWL-900AP+)

*The DI-614+ is also compatible with the D-Link Air 802.11b family of products, which include:*

- ◆ 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650)
- ◆ 2.4GHz Wireless PCI cards used with desktop computers (DWL-520)
- ◆ Wireless Router/Access Point/Print Servers (DI-713P)
- ◆ Wireless Access Points (DWL-1000AP, DWL-900AP)

## 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

## Wireless Basics (continued)

sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

### Installation Considerations

Designed to go up to 1,312 feet (400 meters) outdoors and up to 328 feet (100 meters) indoors, D-Link *AirPlus* DI-614+ lets you access your network with your laptop computer 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 thru may limit 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 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 *Air* 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 DI-614+ 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-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.**

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

A wireless Broadband Router - **D-Link AirPlus DI-614+**

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 (continued)

### 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 the DI-614+ Wireless Broadband Router. See the **Quick Installation Guide** included with the router.
- 4 If you are including a desktop computer in your network, you can install the **D-Link DFE-530TX+** Ethernet NIC adapter into the desktop computer. See the **Quick Installation Guide** included with the DFE-530TX+.
- 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+.

## 5. Using the Configuration Menu

Whenever you want to configure your network or the DI-614+, you can access the Configuration Utility by opening the web-browser and typing in the IP Address of the DI-614+. The DI-614+ default IP Address is shown below:

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



*(The IP Address shown in the example above is the default setting. If you have changed the IP Address of the DI-614+ to conform to a network, then input that IP Address in the web browser, instead of the default IP Address shown.)*

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



### Setup Wizard

The Setup Wizard page is the first page that appears when logging into the web-based management interface. The Setup Wizard is a utility used to quickly configure the DI-614+. It will guide you through four quick and basic steps to help you connect to your ISP. You will be connected to your ISP (Internet Service Provider) and have Internet access within minutes.

## Home > Wizard

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "DI-614+ Enhanced 2.4GHz Wireless Router". The navigation menu includes "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected, and the sub-section is "Setup Wizard".

On the left sidebar, there are five buttons: "Wizard" (highlighted in yellow), "Wireless", "WAN", "LAN", and "DHCP".

The main content area contains the following text:

The DI-614+ is an Wireless Broadband Router ideal for home networking and small business networking. The setup wizard will guide you to configure the DI-614+ to connect to your ISP (Internet Service Provider). The DI-614+'s easy setup will allow you to have Internet access within minutes. Please follow the setup wizard step by step to configure the DI-614+.

Below the text is a "Run Wizard" button. In the bottom right corner, there is a "Help" button with a red plus sign icon.

## Wireless

Wireless Settings are settings for the (Access Point) Portion of the Wireless Router. It allows you to change the wireless settings to fit an existing wireless network or to customize your wireless network.

## Home > Wireless

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "DI-614+ Enhanced 2.4GHz Wireless Router". The navigation menu includes "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected, and the sub-section is "Wireless Settings".

On the left sidebar, there are five buttons: "Wizard", "Wireless" (highlighted in yellow), "WAN", "LAN", and "DHCP".

The main content area contains the following text:

Wireless Settings  
These are the wireless settings for the AP(Access Point)Portion.

Below the text are the following settings:

- Enabled  Disabled
- SSID: default
- Channel: 6
- WEP:  Enabled  Disabled
- WEP Encryption: 64Bit
- Key Type: HEX
- Key1:
- Key2:
- Key3:
- Key4:

In the bottom right corner, there are three buttons: "Apply" (with a green checkmark icon), "Cancel" (with a red X icon), and "Help" (with a red plus sign icon).

## Home > Wireless (continued)

### Enabled or Disabled

By default, Wireless is **Enabled**. If you do not want to use the Wireless feature on the DI-614+, you can disable it by selecting **Disabled**.

### SSID

Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is "**default**". The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

### Channel

Indicates the channel setting for the DI-614+. By default the channel is set to **6**. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network.

### WEP

Wired Equivalent Protocol (WEP) is a wireless security protocol for Wireless Local Area Networks (WLAN). WEP provides security by encrypting the data that is sent over the WLAN. The DI-614+ supports 3 levels of WEP Encryption: 64Bit encryption, 128Bit encryption, and 256Bit encryption. WEP is **disabled** by default. The WEP setting can be changed to fit an existing wireless network or to customize your wireless network.

### Key Type

The Key Types that are supported by the DI-614+ are HEX (Hexadecimal) and ASCII (American Standard Code for Information Interchange.) The Key Type can be changed to fit an existing wireless network or to customize your wireless network.

### KEYS

Keys 1-4 allow you to easily change wireless encryption settings to maintain a secure network. Simply select the specific key to be used for encrypting wireless data on the network.

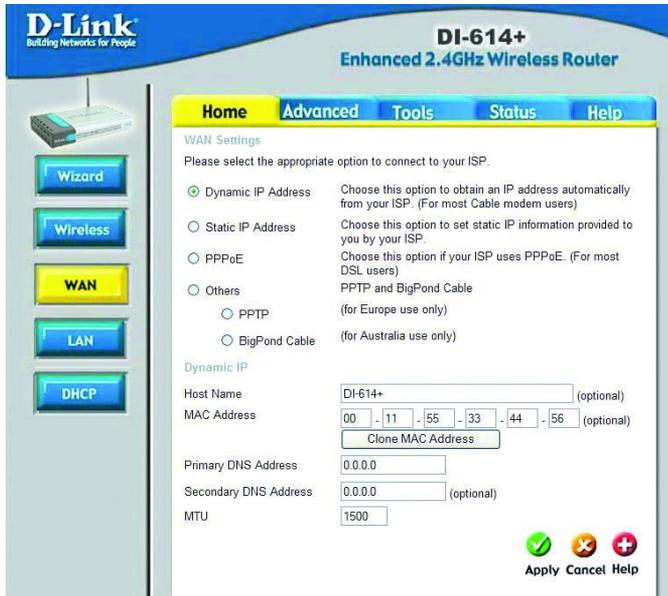
## Home > Wireless (continued)

### WAN

WAN is short for Wide Area Network. The WAN settings can be referred to as the Public settings. All IP information in the WAN settings are public IP addresses which are accessible on the Internet.

The WAN settings consist of three options: **Dynamic IP Address**, **Static IP Address**, and **PPPoE**. Select the appropriate option and fill in the information needed to connect to your ISP.

## Home > WAN



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Home Advanced Tools Status Help

WAN Settings

Please select the appropriate option to connect to your ISP.

Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)

Static IP Address Choose this option to set static IP information provided to you by your ISP.

PPPoE Choose this option if your ISP uses PPPoE. (For most DSL users)

Others

PPTP (for Europe use only)

BigPond Cable (for Australia use only)

Dynamic IP

Host Name  (optional)

MAC Address  (optional)

Primary DNS Address

Secondary DNS Address  (optional)

MTU



### Dynamic IP Address

Choose **Dynamic IP Address** to obtain IP address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for Cable modem services.

**Host Name:** The Host Name field is optional but may be required by some ISPs. The host name is the device name of the Broadband Router.

**MAC Address:** The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with this MAC address. It is not recommended that you change the default MAC address unless required by your ISP.

## Home > WAN (continued)

**Primary/Secondary DNS Address:** Enter a DNS Address if you do not wish to use the one provided by your ISP.

**MTU:** Only enter the MTU if it is required by your ISP. Otherwise, leave it at the default setting of 1500.

## Static IP Address

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page is titled "WAN Settings" and prompts the user to "Please select the appropriate option to connect to your ISP." The "Static IP Address" option is selected with a green radio button. Below this, there are input fields for "IP Address", "Subnet Mask", "ISP Gateway Address", "Primary DNS Address", "Secondary DNS Address", and "MTU". The "IP Address" field is pre-filled with "0.0.0.0" and has a note "(assigned by your ISP)". The "MTU" field is pre-filled with "1500". At the bottom right, there are three buttons: "Apply" (with a green checkmark), "Cancel" (with a red X), and "Help" (with a red plus sign).

Choose Static IP Address if all WAN IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

**IP Address:** Public IP address provided by your ISP.

**Subnet Mask:** Subnet mask provided by your ISP.

**ISP Gateway Address:** Public IP address of your ISP that you are connecting to.

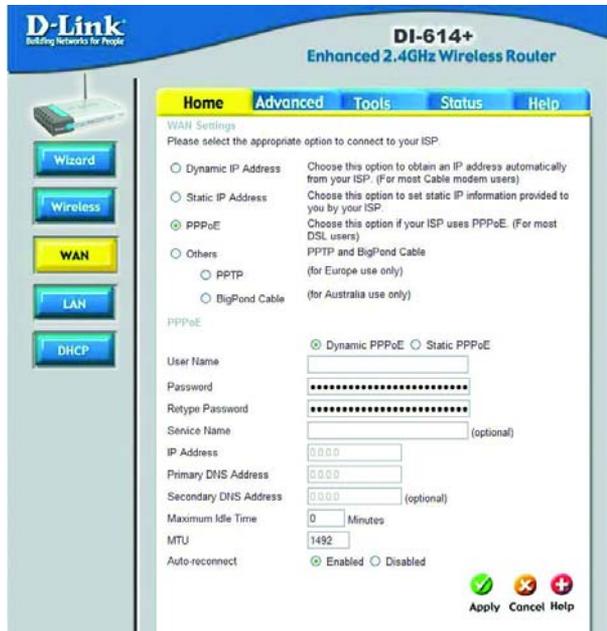
**Primary/Secondary DNS Address:** Enter a DNS Address if you do not wish to use the one provided by your ISP.

**MTU:** Enter an MTU value only if required by your ISP. Otherwise, leave it at the default setting of 1500.

## PPPoE

Please be sure to remove any Client Software program on your computer before you start your configuration of the DI-614+ Router.

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoE connection.



The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The 'WAN Settings' section is active, and the 'PPPoE' option is selected. The 'Dynamic PPPoE' radio button is chosen. The 'User Name' and 'Password' fields are present, along with a 'Retype Password' field. The 'Service Name' field is optional. The 'IP Address' field is set to 0.0.0.0. The 'Primary DNS Address' and 'Secondary DNS Address' fields are also set to 0.0.0.0. The 'Maximum Idle Time' is set to 0 minutes. The 'MTU' is set to 1492. The 'Auto-reconnect' option is checked and enabled. The 'Apply' button is highlighted in green.

**Dynamic PPPoE:** PPPoE connection where you will receive an IP address automatically from your ISP

**Static PPPoE:** PPPoE connection where you have an assigned (static) IP address

**User Name:** Your PPPoE username provided by your ISP

**Password:** Your PPPoE password provided by your ISP

**Retype Password:** Re-enter PPPoE password

**Service Name:** Enter the service name provided by your ISP. (optional)

**IP Address:** This option is only available for Static PPPoE. Enter in the static IP address for the PPPoE connection.

**Primary DNS Address:** Primary DNS IP provided by your ISP

**Secondary DNS Address:** optional

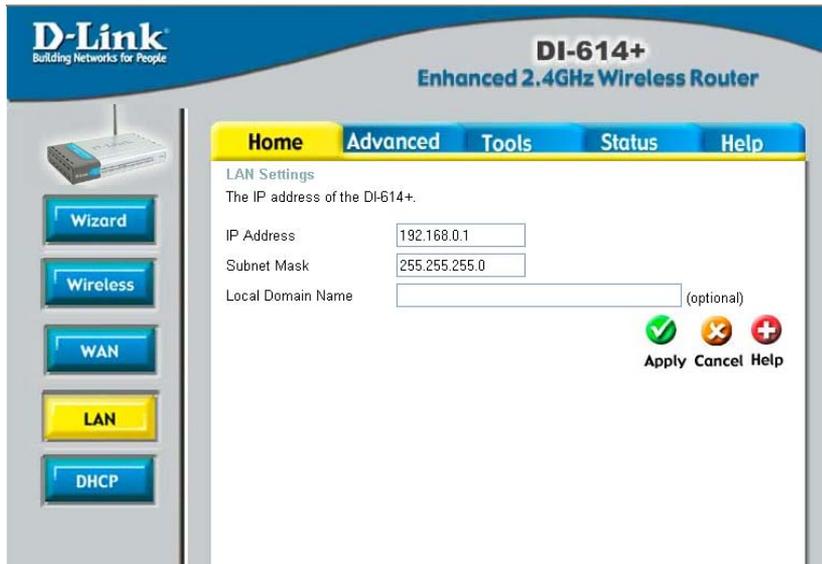
**Maximum Idle time:** The amount of time of inactivity before disconnecting your PPPoE session. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined Maximum Idle Time, then the connection will be dropped. Either set this to zero or enable Auto-reconnect to disable this feature.

**MTU:** MTU stands for Maximum Transmission Unit. For PPPoE connections, you may need to change the MTU settings in order to work correctly with

your ISP.

**Auto-reconnect:** If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

## Home > LAN



The screenshot shows the web interface of a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "DI-614+ Enhanced 2.4GHz Wireless Router". The navigation menu includes "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected. On the left sidebar, there are buttons for "Wizard", "Wireless", "WAN", "LAN" (highlighted in yellow), and "DHCP". The main content area is titled "LAN Settings" and contains the text "The IP address of the DI-614+." followed by three input fields: "IP Address" with the value "192.168.0.1", "Subnet Mask" with the value "255.255.255.0", and "Local Domain Name" which is empty and marked as "(optional)". At the bottom right of the form are three buttons: "Apply" (with a green checkmark icon), "Cancel" (with a red X icon), and "Help" (with a red plus icon).

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DI-614+. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

**IP Address:** The IP address of the LAN interface. The default IP address is 192.168.0.1.

**Subnet Mask:** The subnet mask of the LAN interface. The default subnet mask is 255.255.255.0.

**Local Domain Name:** This field is optional. Enter in the your local domain name.

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Home Advanced Tools Status Help

DHCP Server  
The DI-614+ can be setup as a DHCP Server to distribute IP addresses to the LAN network.

DHCP Server  Enabled  Disabled

Starting IP Address 192 . 168 . 0 . 100

Ending IP Address 192 . 168 . 0 . 199

Lease Time 1 Hour

Apply Cancel Help

DHCP Client Table

Host Name	IP Address	MAC Address	Expired Time
pm	192.168.0.100	00-02-96-03-A9-F1	Feb/05/2106 23:31:47

## DHCP

DHCP stands for Dynamic Host Control Protocol. The DI-614+ has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to “Obtain an IP Address Automatically.” When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DI-614+. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

**Starting IP address:** The starting IP address for the DHCP server’s IP assignment.

**Ending IP address:** The ending IP address for the DHCP server’s IP assignment.

**Lease Time:** The length of time for the IP lease.

## Advanced > Virtual Server

The screenshot shows the configuration interface for the Virtual Server feature on a D-Link DI-614+ router. The interface includes a navigation menu on the left with options like Virtual Server, Applications, Filters, Firewall, DMZ, and Performance. The main content area has tabs for Home, Advanced, Tools, Status, and Help. The Virtual Server section is currently selected and shows a form for configuring a new virtual server. The form includes fields for Name, Private IP, Protocol Type (set to TCP), Private Port, and Public Port. There are radio buttons for 'Enabled' and 'Disabled', and a 'Clear' button. A schedule section allows for 'Always' or a specific time range (From time to to day). At the bottom, there is a 'Virtual Servers List' table and three action buttons: Apply, Cancel, and Help.

**Virtual Server**  
Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

Name

Private IP

Protocol Type

Private Port

Public Port

Schedule  Always

From time  :  AM to  :  AM

day  to

Virtual Servers List				
Name	Private IP	Protocol	Schedule	
<input type="checkbox"/> Virtual Server FTP	0.0.0.0	TCP 21/21	always	<input type="button" value="Apply"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>
<input type="checkbox"/> Virtual Server HTTP	0.0.0.0	TCP 80/80	always	<input type="button" value="Apply"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>

### Virtual Server

The DI-614+ can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The DI-614+ firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-614+ are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling *Virtual Server*. Depending on the requested service, the DI-614+ redirects the external service request to the appropriate server within the LAN network.

The DI-614+ is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

Each virtual services that are created will be listed at the bottom of the screen in the Virtual Servers List. There are already pre-defined virtual

services already in the table. You may use them by enabling them and assigning the server IP to use that particular virtual service.

**Name:** The name referencing the virtual service.

**Private IP:** The server computer in the LAN (Local Area Network) that will be providing the virtual services.

**Private Port:** The port number of the service used by the Private IP computer.

**Protocol Type:** The protocol used for the virtual service.

**Public Port:** The port number on the WAN side that will be used to access the virtual service.

**Schedule:** The schedule of time when the virtual service will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. If it is set to Time, select the time frame for the service to be enabled. If the system time is outside of the scheduled time, the service will be disabled.

Example #1:

If you have a Web server that you wanted Internet users to access at all times, you would need to enable it. Web (HTTP) server is on LAN (Local Area Network) computer 192.168.0.25. HTTP uses port 80, TCP.

Name: Web Server

Private IP: 192.168.0.25

Protocol Type: TCP

Private Port: 80

Public Port: 80

Schedule: always

#### Virtual Servers List

	Name	Private IP	Protocol	Schedule	
<input checked="" type="checkbox"/>	Virtual Server HTTP	192.168.0.25	TCP 80/80	always	 



Click on this icon to edit the virtual service.



Click on this icon to delete the virtual service.

### Example #2:

If you have an FTP server that you wanted Internet users to access by WAN port 2100 and only during the weekends, you would need to enable it as such. FTP server is on LAN computer 192.168.0.30. FTP uses port 21, TCP.

Name: FTP Server

Private IP: 192.168.0.30

Protocol Type: TCP

Private Port: 21

Public Port: 2100

Schedule: From: 01:00AM to 01:00AM, Sat to Sun

- All Internet users who want to access this FTP Server must connect to it from port 2100. This is an example of port redirection and can be useful in cases where there are many of the same servers on the LAN network.

## Advanced > Applications

**D-Link**  
Building Networks for People

**DI-614+**  
Enhanced 2.4GHz Wireless Router

Home **Advanced** Tools Status Help

Special Application  
Special Application is used to run applications that require multiple connections.

Enabled  Disabled

Name:

Trigger Port:  -

Trigger Type:

Public Port:

Public Type:

Special Applications List

NAME	Trigger	Public	
<input type="checkbox"/> Battle.net	6112	6112	
<input type="checkbox"/> Dialpad	7175	51200-51201,51210	
<input type="checkbox"/> ICU II	2019	2000-2038,2050-2051,2069,2085,3010-3030	
<input type="checkbox"/> MSN Gaming Zone	47624	2300-2400,28800-29000	
<input type="checkbox"/> PC-to-Phone	12053	12120,12122,24150-24220	
<input type="checkbox"/> Quick Time 4	554	6970-6999	

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special

Applications makes some of these applications work with the DI-614+. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

The DI-614+ provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

**Note!** Only one PC can use each Special Application tunnel.

**Trigger Name:** This is the name referencing the special application.

**Trigger Port:** This is the port used to trigger the application. It can be either a single port or a range of ports.

**Trigger Type:** This is the protocol used to trigger the special application.

**Public Port:** This is the port number on the WAN side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.

**Public Type:** This is the protocol used for the special application.

**Schedule:** This is the schedule of time when the special application will be enabled.

## Filters

Filters are used to deny or allow LAN (Local Area Network) computers from accessing the Internet. The DI-614+ can be setup to deny internal computers by their IP or MAC addresses. The DI-614+ can also block users from accessing restricted web sites.

### IP Filters

Use IP Filters to deny LAN IP addresses from accessing the Internet. You can deny specific port numbers or all ports for the specific IP address.

## Advanced > Filters

The screenshot shows the D-Link DI-614+ Enhanced 2.4GHz Wireless Router web interface. The navigation menu includes Home, Advanced (selected), Tools, Status, and Help. The main content area is titled "Filters" and contains the following sections:

- Filters:** Used to allow or deny LAN users from accessing the Internet. Includes radio buttons for IP Filters (selected), MAC Filters, URL Blocking, and Domain Blocking.
- IP Filters:** Used to deny LAN IP addresses access to the Internet. Includes radio buttons for Enabled (selected) and Disabled, and a Clear button.
- Configuration fields:** IP (text input), Port (text input), Protocol Type (dropdown menu set to TCP), and Schedule (radio buttons for Always, and a time/day selector).
- IP Filter List:** A table with columns for IP Range, Protocol, and Schedule. It lists various protocols and their default schedules.

IP Filter List	IP Range	Protocol	Schedule	Apply	Cancel	Help
<input type="checkbox"/>	*	TCP 20-21	always			
<input type="checkbox"/>	*	TCP 80	always			
<input type="checkbox"/>	*	TCP 443	always			
<input type="checkbox"/>	*	UDP 53	always			
<input type="checkbox"/>	*	TCP 25	always			
<input type="checkbox"/>	*	TCP 110	always			
<input type="checkbox"/>	*	ICMP 8	always			
<input type="checkbox"/>	*	TCP 23	always			

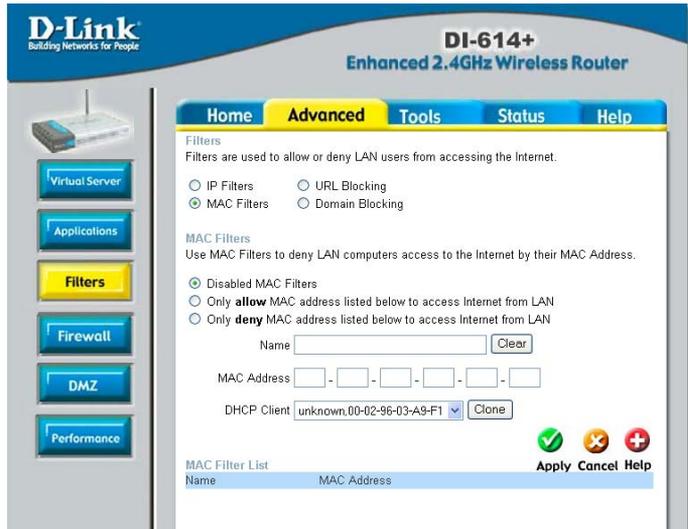
**IP:** The IP address of the LAN computer that will be denied access to the Internet.

**Port:** The single port or port range that will be denied access to the Internet.

**Schedule:** This is the schedule of time when the IP Filter will be enabled.

## MAC Filters

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Internet. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.



## URL Blocking

URL Blocking is used to deny LAN computers from accessing specific web sites by its URL. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display.



## Domain Blocking

Domain Blocking is used to allow or deny LAN (Local Area Network) computers from accessing specific domains on the Internet. Domain blocking will deny all requests to a specific domain such as http and ftp. It can also allow computers to access specific sites and deny all other sites.

The screenshot shows the 'Advanced' configuration page for the D-Link DI-614+ router. The 'Filters' section is active, and 'Domain Blocking' is selected. The 'Domain Blocking' section is currently set to 'Disabled'. There are input fields for 'Permitted Domains' and 'Blocked Domains', each with a 'Delete' button. The interface includes a sidebar with navigation buttons for Virtual Server, Applications, Filters, Firewall, DMZ, and Performance. At the bottom right, there are 'Apply', 'Cancel', and 'Help' buttons.

## Advanced > Firewall

The screenshot shows the 'Firewall Rules' configuration page in the 'Advanced' section of the D-Link DI-614+ router. The 'Firewall Rules' section is active, and the 'Enabled' radio button is selected. The 'Name' field is empty, and the 'Action' is set to 'Deny'. The 'Interface' is set to 'WAN'. The 'Source' and 'Destination' fields are set to '\*'. The 'Protocol' is set to 'TCP'. The 'Schedule' is set to 'Always'. The 'Firewall Rules List' table shows three rules: 'Allow' for ping, 'Deny' for default, and 'Allow' for default.

Action	Name	Source	Destination	Protocol
<input checked="" type="checkbox"/>	Allow	WAN,*	LAN,192.168.0.1	ICMP,8
<input checked="" type="checkbox"/>	Deny	*,*	LAN,*	IP (0),*
<input checked="" type="checkbox"/>	Allow	LAN,*	*,*	IP (0),*

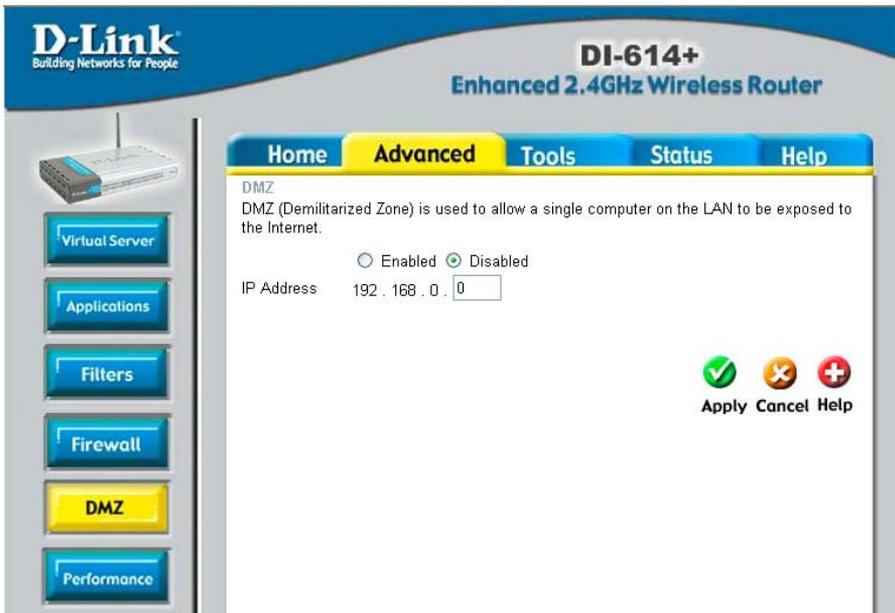
Firewall Rules is an advance feature used to deny or allow traffic from passing through the Broadband Router. It works in the same way as IP Filters with additional settings. You can create more detailed access rules for

the DI-614+. When virtual services are created and enabled, it will also display in Firewall Rules. Firewall Rules contains all network firewall rules pertaining to IP (Internet Protocol).

In the **Firewall Rules List** at the bottom of the screen, the priorities of the rules are from top (highest priority) to bottom (lowest priority.)

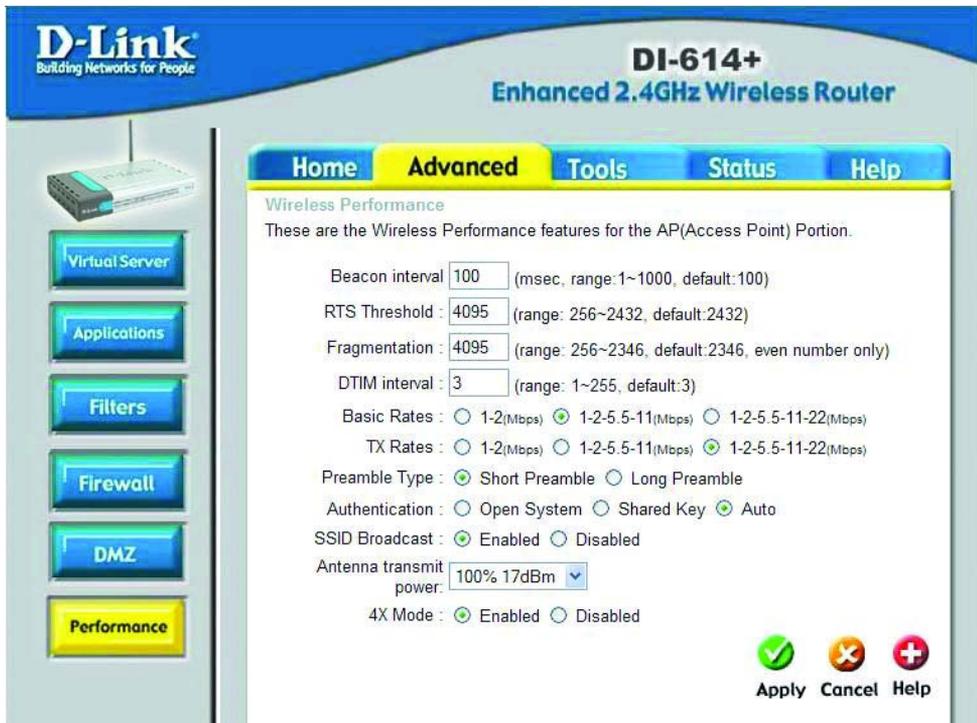
**Note:** The DI-614+ MAC Address filtering rules have precedence over the Firewall Rules.

## Advanced > DMZ



If you have a client PC that cannot run Internet applications properly from behind the DI-614+, then you can set the client up to unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

## Advanced > Performance



The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The 'Performance' tab is selected, displaying various wireless performance settings. The settings are as follows:

- Beacon interval: 100 (msec, range: 1~1000, default: 100)
- RTS Threshold: 4095 (range: 256~2432, default: 2432)
- Fragmentation: 4095 (range: 256~2346, default: 2346, even number only)
- DTIM interval: 3 (range: 1~255, default: 3)
- Basic Rates:  1-2(Mbps)  1-2-5.5-11(Mbps)  1-2-5.5-11-22(Mbps)
- TX Rates:  1-2(Mbps)  1-2-5.5-11(Mbps)  1-2-5.5-11-22(Mbps)
- Preamble Type:  Short Preamble  Long Preamble
- Authentication:  Open System  Shared Key  Auto
- SSID Broadcast:  Enabled  Disabled
- Antenna transmit power: 100% 17dBm
- 4X Mode:  Enabled  Disabled

At the bottom right, there are three buttons: 'Apply' (green checkmark), 'Cancel' (orange X), and 'Help' (red plus).

**Beacon Interval-** Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. **100** is the default setting and is recommended.

**RTS Threshold-** This value should remain at its default setting of **2432**. If inconsistent data flow is a problem, only a minor modification should be made. (When 4X Mode is enabled, the default value will change to **4095**.)

**Fragmentation-** This value should also remain at its default setting of **2346**. 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. (When 4X Mode is enabled, the default value will change to **4095**.)

**DTIM interval-** (**D**elivery **T**raffic **I**ndication **M**essage) **3** is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**TX Rates-** Select the data rate. Default is **1-2-5.5-11-22Mbps**.

**Preamble Type-** **Short preamble** is the default setting. (High traffic networks should use the shorter preamble type.) The preamble defines the length of the CRC block used in communication between the Access Point and the roaming wireless Network adapters. (Cyclic Redundancy Check is a common technique for detecting data transmission errors)

**Authentication-** Select **Open system**, **Shared Key** or **Both**

**Open System** - The DI-614+ will be visible to all devices on the network. This is the default setting

**Shared Key** - In this mode, in order to access the DI-614+ on the network, the device must be listed in the MAC Address Control List

**Both** - In this mode, all devices on the network can access the DI-614+

**SSID Broadcast-** Choose **Enabled** to broadcast the SSID across the network. All devices on a network must share the same SSID (Service Set Identifier) to establish communication. Choose **Disabled** if you do not wish to broadcast the SSID over the network.

**Antenna Transmit Power-** You can adjust the strength of your antenna transmission. This may be beneficial for security purposes.

**4X Mode-** Enable 4X Mode on the wireless client and the DI-614+ to increase data transmission speed. 4X Mode will only work with wireless devices that also support 4X Mode.

**Tools > Admin**

**Admin**

At this page, the DI-614+ administrator can change the system password. There are two accounts that can access the Broadband Router's Web-Management interface. They are **admin** and **user**. **Admin** has read/write



access while **user** has read-only access. **User** can only view the settings but cannot make any changes.

**Remote Management**

Remote Management allows the DI-614+ to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can

browse the built-in web pages to perform “Administrator” tasks. This feature enables you to perform “Administrator” tasks from the remote (Internet) host.

**IP Address:** Internet IP address of the computer that has access to the Broadband Router. *It is not recommended that you set the IP address to \* (star), because this allows any Internet IP address to access the Broadband Router, which could result in a loss of security for your network.* If you elect to **enable** Remote Management, enter the IP Address of your remote location.

**Port:** Select the port number used to access the Broadband Router.

**Example:** <http://x.x.x.x:8080> whereas x.x.x.x is the WAN IP address of the Broadband Router and 8080 is the port used for the Web-Management interface.

## Tools > Time

### Time

The system time is the time used by the DI-614+ for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If an NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.



## Tools > System

### System Settings

The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file can be loaded back on the Broadband Router. To reload a system settings file, click on Browse to browse the local hard drive and locate the system file to be used. You may also reset the Broadband Router back to factory settings by clicking on **Restore**.



## Firmware Upgrade

You can upgrade the firmware of the Broadband Router at this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click on Browse to browse the local hard drive and locate the firmware to be used for the update. Upgrading the firmware will not change any of your system settings, but it is recommended that you save your system settings before doing a firmware upgrade. Please check the D-Link support site for firmware updates at <http://support.dlink.com>.

## Tools > Firmware



## Miscellaneous Items

These are additional tools and features of the Broadband Router.

## Ping Test

This useful diagnostic utility can be used to check if a computer is on the Internet. It sends ping packets and listens for replies from the specific host.

## Restart Device

If for any reason the Broadband Router is not responding correctly, you may want to restart the Broadband Router.

## Tools > Misc



## Block WAN Ping

When you “Block WAN Ping”, will not respond to ping commands from the Internet. Pinging public WAN IP addresses is a common method used by hackers to test whether your WAN IP address is valid.

**Discard PING from WAN side:** By enabling this option, the DI-614+ will not reply to ping (ICMP) request packets from the Internet.

**UPNP Settings:** Click Enable to enable Universal Plug and Play settings.

**Gaming Mode:** Click Enable to enable Gaming Mode. This feature allows many online games to work with the DI-614+.

## VPN Pass-Through

The Broadband Router supports VPN (Virtual Private Network) pass-through for both PPTP (Point-to-Point Tunneling Protocol) and IPSec (IP Security). Once VPN pass-through is enabled, there is no need to open up virtual services. Multiple VPN connections can be made through the Broadband Router. This is useful when you have many VPN clients on the LAN network.

**Dynamic DNS:** Fill in the required fields to use the Dynamic Domain Name Server feature.

## Tools > Cable Test

Virtual Cable Tester (VCT) is an advanced feature that integrates a LAN cable tester on every Ethernet port on the router. Through the graphical user interface (GUI), VCT can be used to remotely diagnose and report cable faults such as opens, shorts, swaps, and impedance mismatch. The VCT feature significantly reduces service calls and returns by allowing users to easily troubleshoot their cable connections.



**Ports** – The Ethernet port names associated to the physical ports.

**Link Status** – The current link status of the Ethernet cable connected to the respective Ethernet port.

**More Info** – Click on **More Info** for detailed information about the cable link status.

**Refresh** – Click on **Refresh** to run the VCT test. Allow the router a few seconds to complete the test.

## Status > Device Info

### Device Information

This page in the Configuration Utility displays the current information for the Broadband Router. It will display the WAN, LAN, and MAC address information.

If your WAN connection is set up for **Dynamic IP** address a **Release** button and **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

The screenshot shows the D-Link configuration utility interface for a DI-614+ Enhanced 2.4GHz Wireless Router. The top navigation bar includes Home, Advanced, Tools, Status (highlighted), and Help. The main content area is titled 'Device Information' and shows the following details:

- Firmware Version:** 1.1, Thu, 30 May 2002
- LAN:**
  - MAC Address: 00-05-5D-5B-73-E4
  - IP Address: 192.168.0.1
  - Subnet Mask: 255.255.255.0
  - DHCP Server: Enabled
- WAN:**
  - MAC Address: 00-05-5D-5B-73-E5
  - Connection: DHCP Client Disconnected
  - Buttons: DHCP Release, DHCP Renew
  - IP Address: 0.0.0.0
  - Subnet Mask: 0.0.0.0
  - Default Gateway: 0.0.0.0
  - DNS: (empty)
- Wireless:**
  - MAC Address: 00-05-5D-5A-60-17
  - SSID: default
  - Channel: 6
  - WEP: Disabled

A 'Help' icon is visible in the bottom right corner of the interface.

If your WAN connection is set up for **PPPoE**, a **Connect** button and **Disconnect** button will be displayed. Use **Disconnect** to drop the PPPoE connection and use **Connect** to establish the PPPoE connection.

This page allows you to observe the DI-614+'s working status:

#### WAN

- **IP Address:** WAN/Public IP Address
- **Subnet Mask:** WAN/Public Subnet Mask
- **Gateway:** WAN/Public Gateway IP Address
- **Domain Name Server:** WAN/Public DNS IP Address
- **WAN Status:** WAN Connection Status

#### LAN

- **IP Address:** LAN/Private IP Address of the DI-614+
- **Subnet Mask:** LAN/Private Subnet Mask of the DI-614+

**Firmware version:** Displays the current firmware version

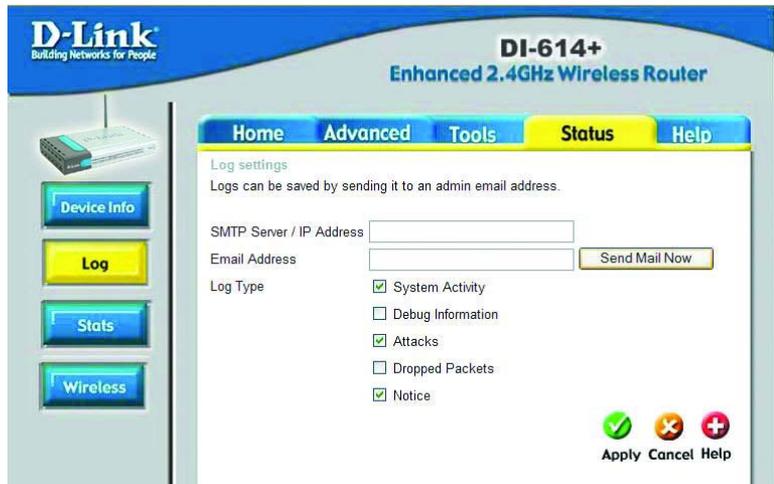
**WAN MAC Address:** Displays the WAN port MAC/hardware address

**LAN MAC Address:** Displays the LAN port MAC/hardware address

## Log

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Settings.

## Status > Log



**First Page** - The first page of the log.

**Last Page** - The last page of the log.

**Previous** - Moves back one log page.

**Next** - Moves forward one log page.

**Clear** - Clears the logs completely.

**Log Settings** - Brings up the page to configure the logs.

## Log Settings

Not only does the Broadband Router display the logs of activities and events, it can be setup to send these logs to another location.

**SMTP Server** - The address of the SMTP server that will be used to send the logs.

**Send to** - The email address the logs will be sent to. Click on Email Log Now to send the email.

## Status > Stats

### Traffic Statistics

The Broadband Router keeps statistic of traffic that passes through it. You are able to view the amount of packets that passes through the Router on both the WAN port and the LAN port. The traffic counter will reset if the device is rebooted.



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Home Advanced Tools **Status** Help

Connected Wireless Client List

The Wireless Client table below displays Wireless clients Connected to the AP (Access Point).

Connected Time	MAC Address
Feb/06/2106 01:13:25	00-05-5D-D9-85-53
Feb/06/2106 00:54:00	00-05-5D-5A-B7-CC
Feb/06/2106 00:51:26	00-05-5D-5A-6A-AF
Feb/06/2106 00:16:45	00-02-2D-45-2F-DC

Help

### Connected Wireless Clients List

The wireless client table displays a list of current connected wireless clients. This table also displays the time and MAC address of the wireless client connected.

## 6. Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DI-614+ Wireless Access Point. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

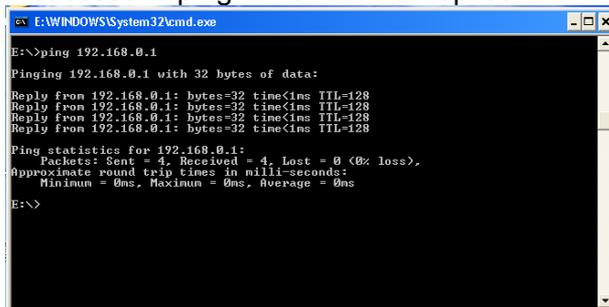
**(Note: It is recommended that you use an Ethernet connection to configure the DI-614+ Access Point.)**

### 1. The computer used to configure the DI-614+ cannot access the Configuration menu.

- Check that the **Ethernet LED** on the DI-614+ 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 6 (**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 DI-614+. Please see **Checking the IP Address in Windows XP** in the **Networking Basics** section of this manual.

**Note: The IP Address of the DI-614+ is 192.168.0.1. All the computers on the network must have a unique IP Address in the same range, e.g., 192.168.0.x. and a Subnet Mask of 255.255.255.0. Any computers that have identical IP Addresses will not be visible on the network.**

- Do a **Ping test** to make sure that the DI-614+ is responding. Go to **Start>Run>Type Command>Type ping 192.168.0.1**. A successful ping will show four replies.

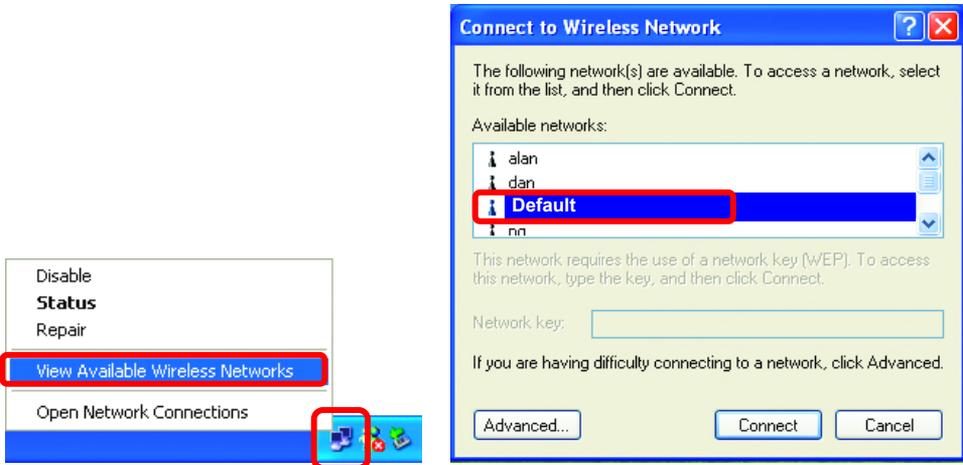


```
EX E:\WINDOWS\system32\cmd.exe
E:\>ping 192.168.0.1
Pinging 192.168.0.1 with 32 bytes of data:
Reply from 192.168.0.1: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
E:\>
```

## 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 router. 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 gateway. *Since the DI-614+ has an IP Address of 192.168.0.1, 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.

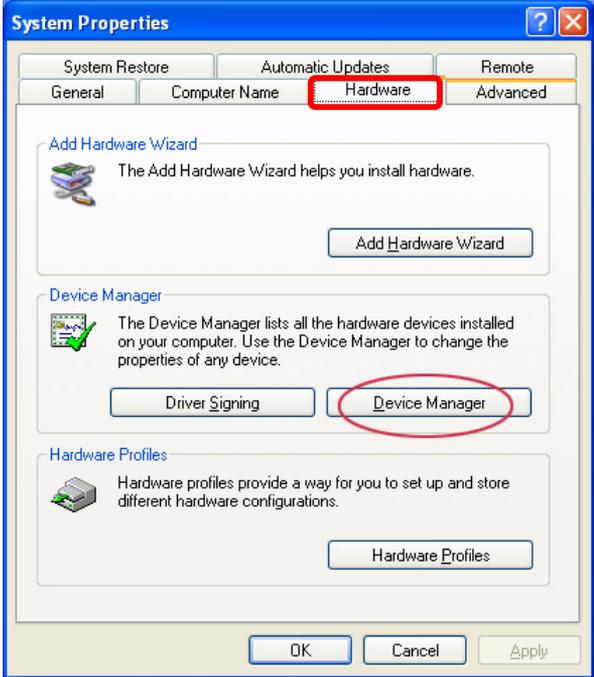
You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

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

**NOTE:** Screen shots taken using Windows XP. If you are using a different Operating System your screen may look different.

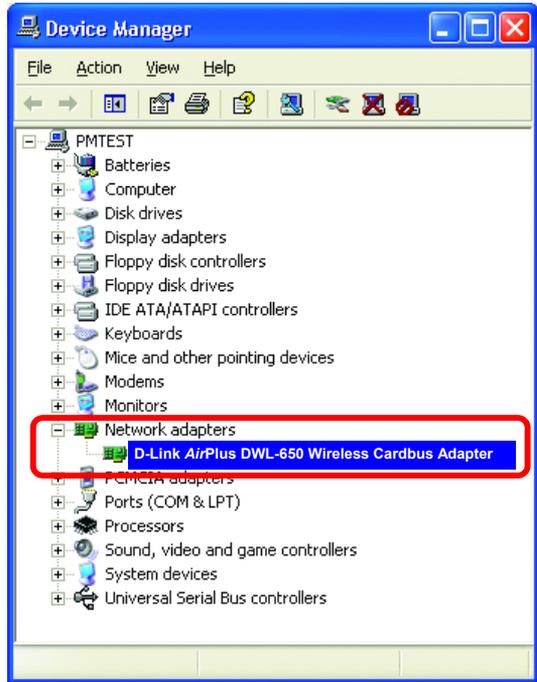


- **Select the Hardware Tab**
- Click **Device Manager**

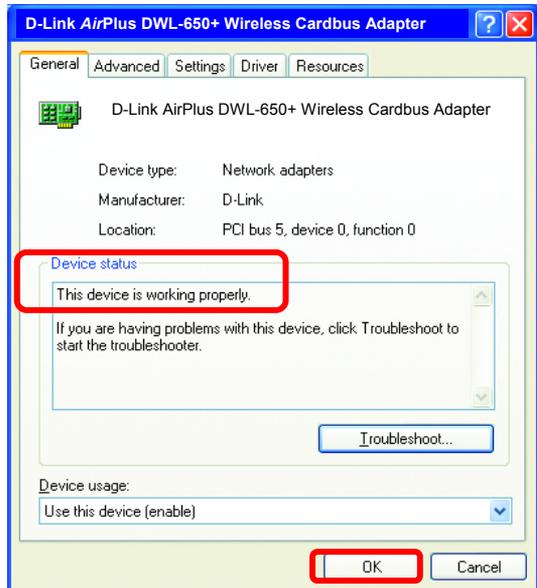


# Troubleshooting

- 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 DI-614+ to Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DI-614+ 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* DI-614+ to Factory Default Settings, please do the following:

- Leave the device powered on, do not disconnect the power
- Press the reset button and hold (use a paper clip)
- Keep the button pressed about 10 seconds
- Release the button

The DI-614+ will then automatically reboot itself.

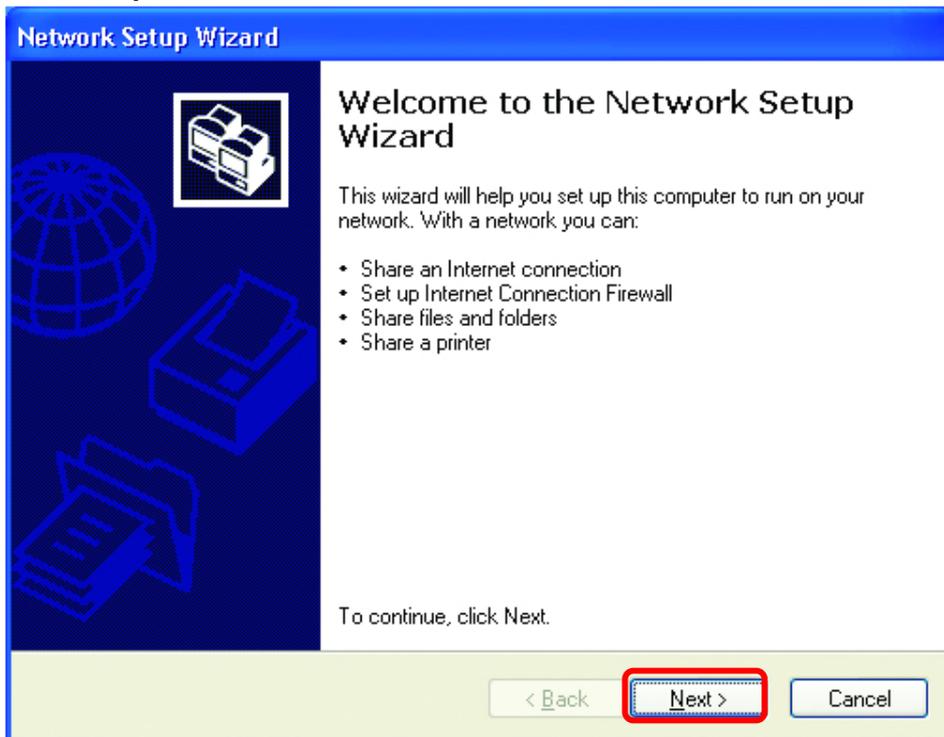
## 7. Networking Basics

### 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.*

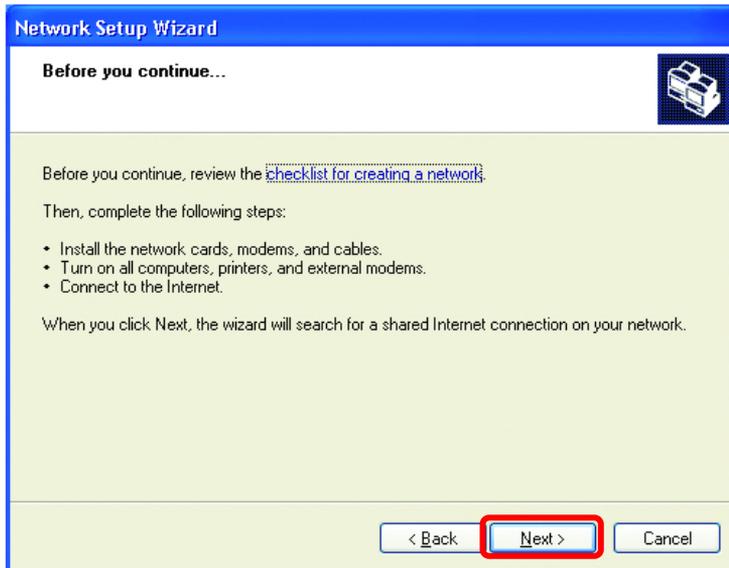
Go to **Start>Control Panel>Network Connections**  
Select **Set up a home or small office network**



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

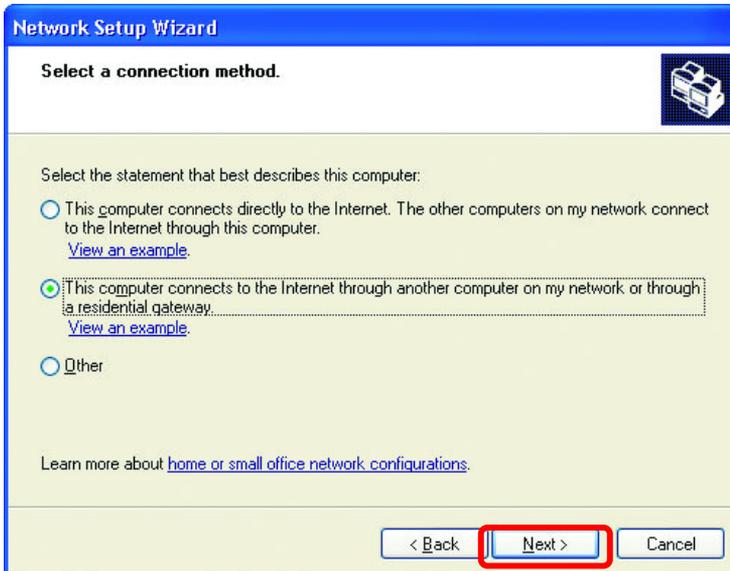
## Networking Basics (continued)

Please follow all the instructions in this window:



Click **Next**

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



Click **Next**

## Networking Basics (continued)

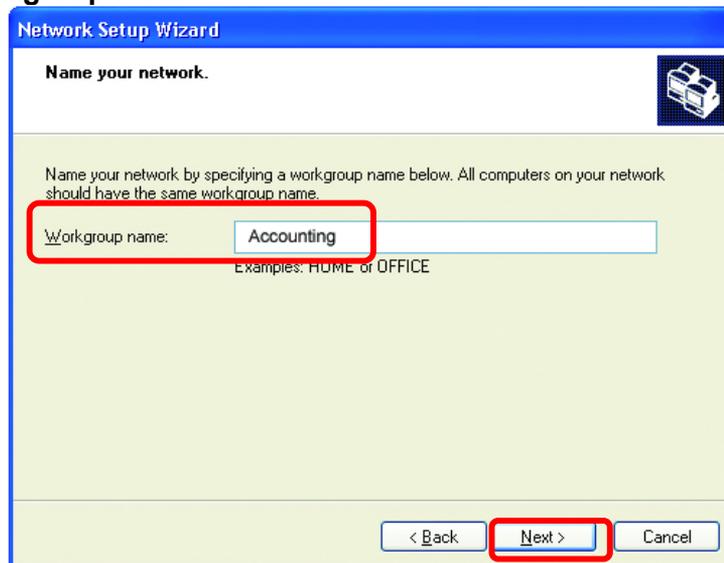
Enter a **Computer description** and a **Computer name** (optional.)



The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' 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 highlighted with a red box.

Click **Next**

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

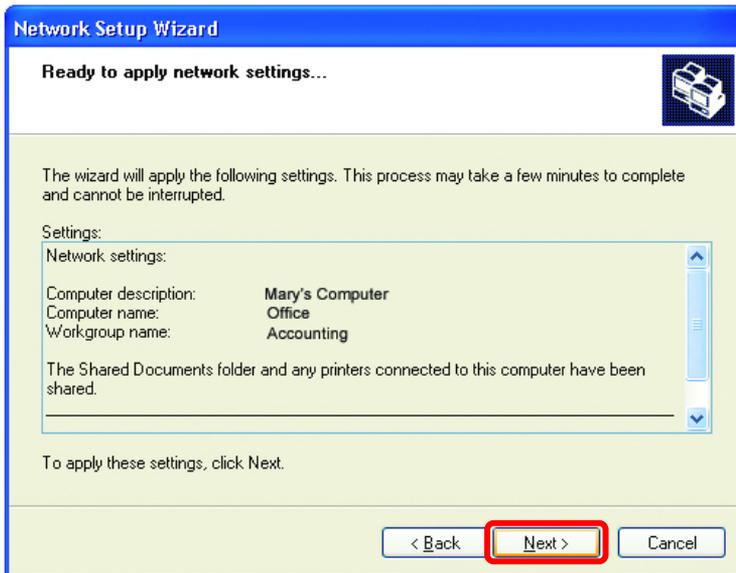


The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' The window contains a text input field for 'Workgroup name:' with the value 'Accounting'. Below the field, it says 'Examples: HOME or OFFICE'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red box.

Click **Next**

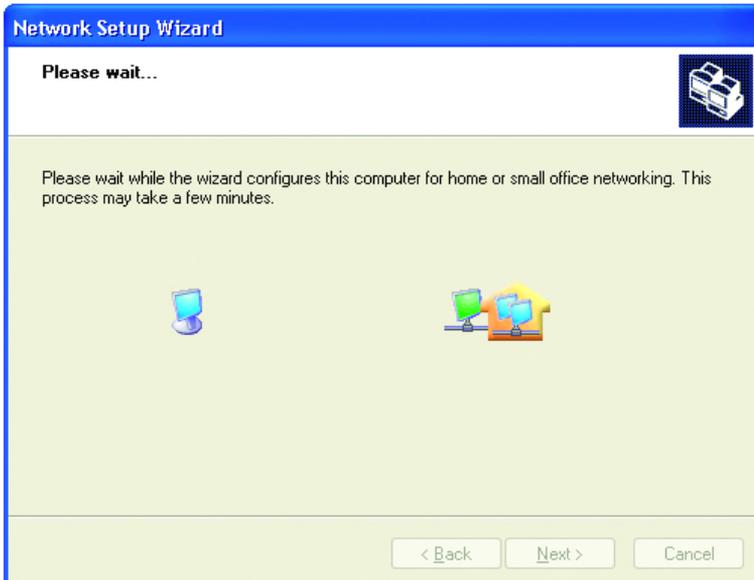
## Networking Basics (continued)

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



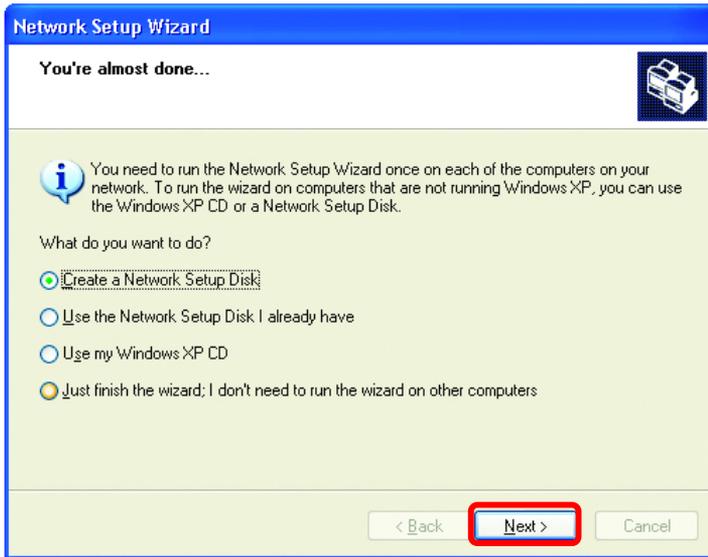
When the changes are complete, click **Next**.

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



## Networking Basics (continued)

In the window below, select the 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**.



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



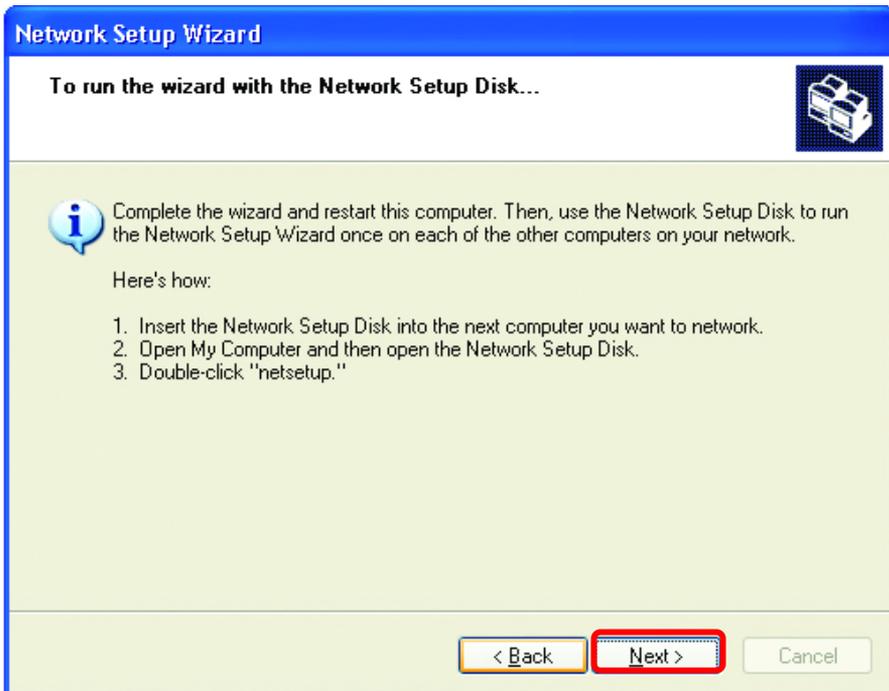
Format the disk if you wish, and click **Next**.

## Networking Basics (continued)

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

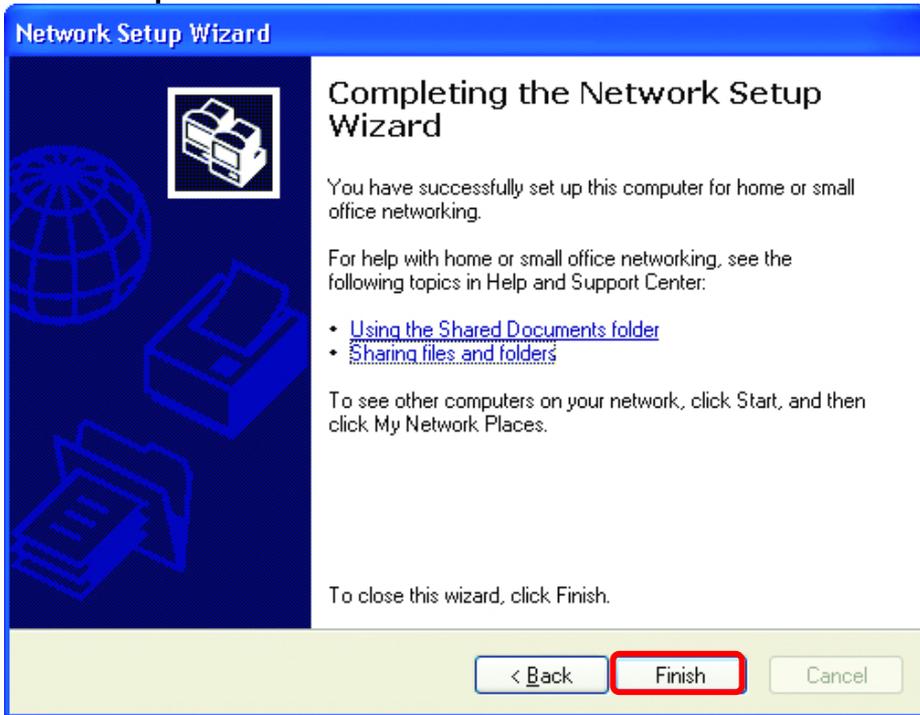


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next**.

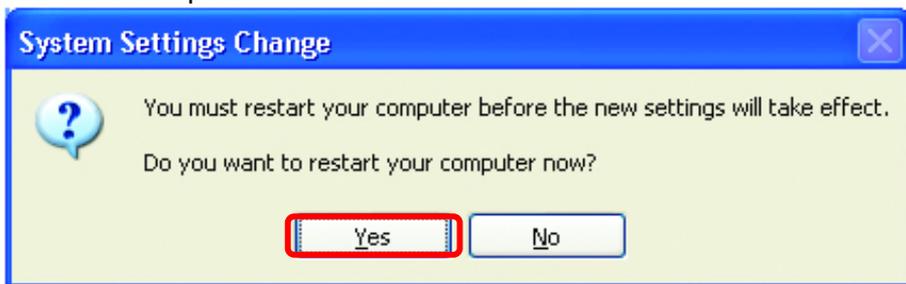


## Networking Basics (continued)

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



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



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

## Networking Basics (continued)

### Naming your Computer

To name your computer, 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

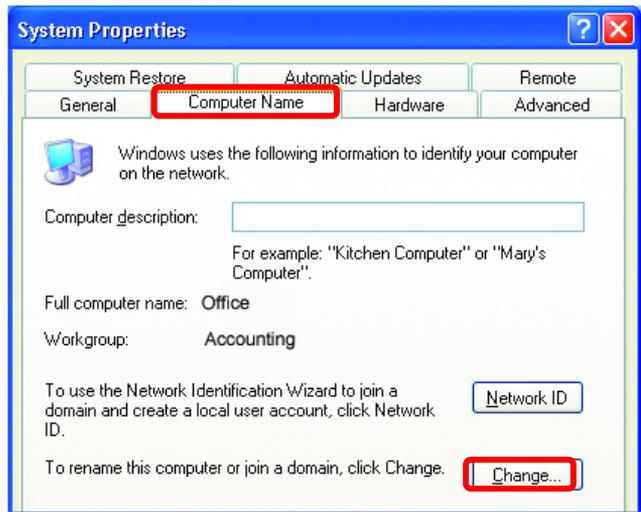


- Select the **Computer Name Tab** in the **System Properties** window.

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

To rename the computer and join a domain,

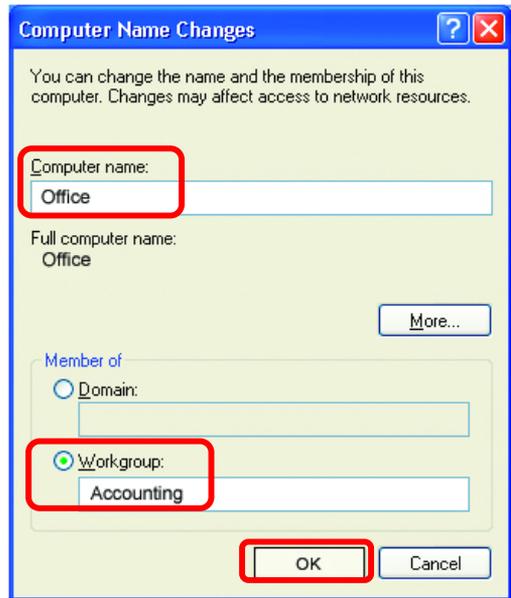
- Click **Change**



## Networking Basics (continued)

### Naming your Computer

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



### Finding the IP Address in Windows XP

The wireless adapter-equipped computers in your network must be in the same IP Address range. To find the IP Address of the adapter, please do the following:

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

Click **Status**



## Networking Basics (continued)

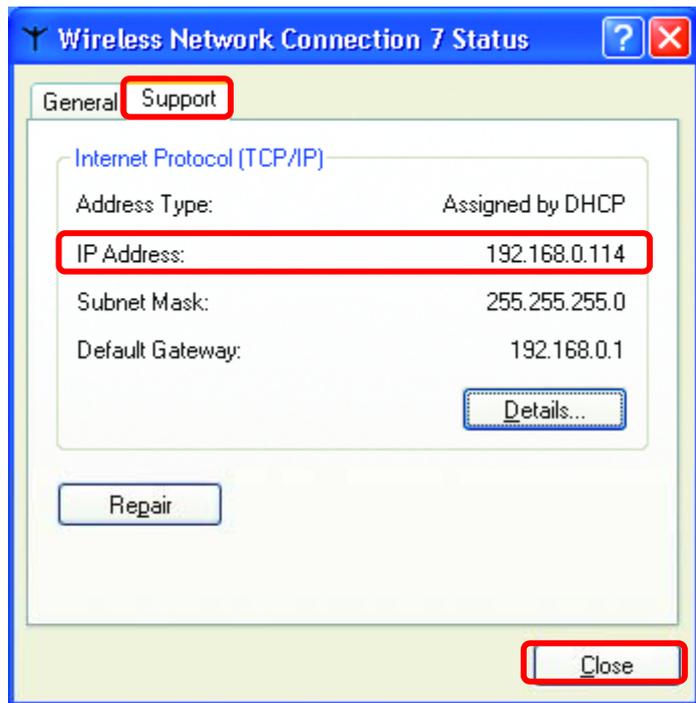
### Finding the IP Address in Windows XP

This window will appear:

Click the  
**Support** tab

View the  
**IP Address**

Click **Close**

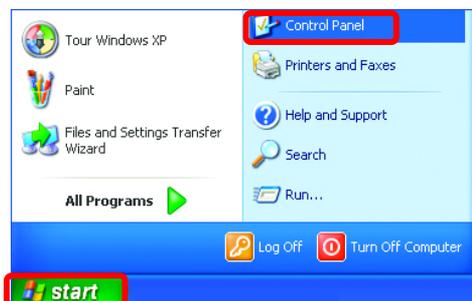


### Assigning a Static IP Address

**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:

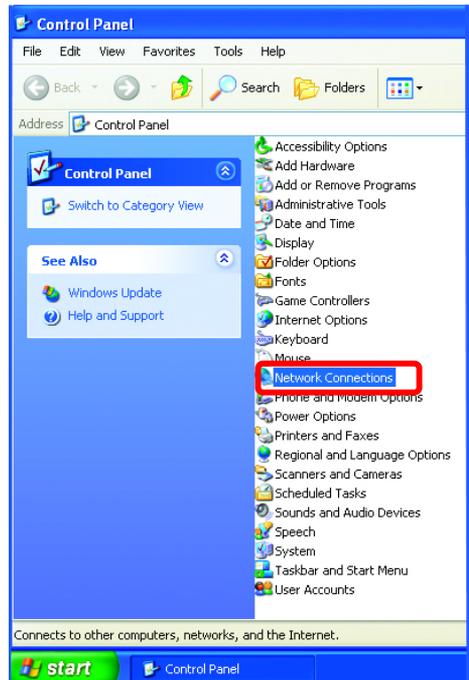
- Go to **Start**
- **Double-click** on **Control Panel**



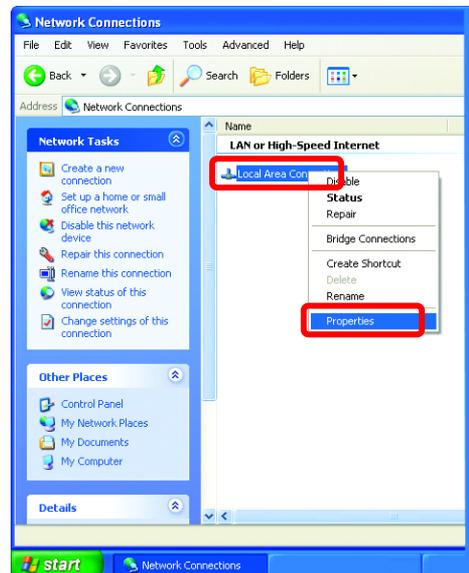
# Networking Basics (continued)

## Assigning a Static IP Address

- Double-click on Network Connections



- Right-click on Local Area Connections.
- Double-click Properties

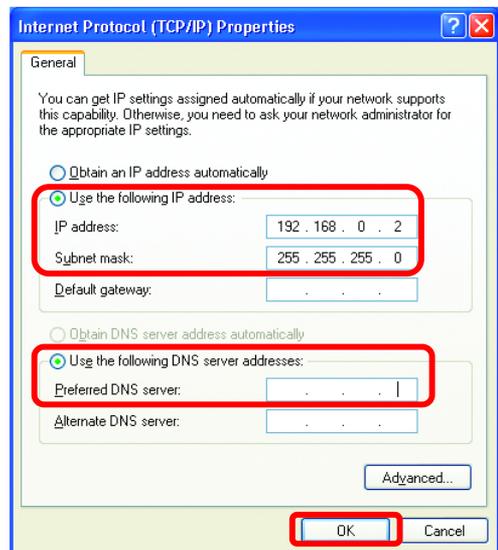
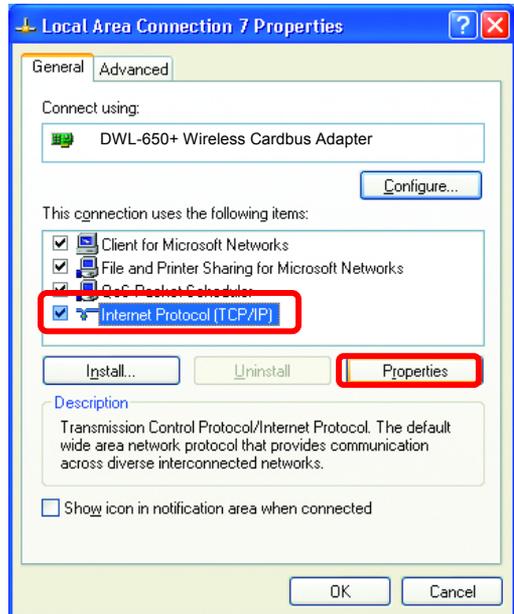


## Networking Basics (continued)

### Assigning a Static IP Address

- Highlight **Internet Protocol (TCP/IP)**
- Click **Properties**
- **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 sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)
- Input your **DNS server addresses**. (Note: If you are entering a DNS server, you must enter the IP Address of the Default Gateway.)

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



- 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.)

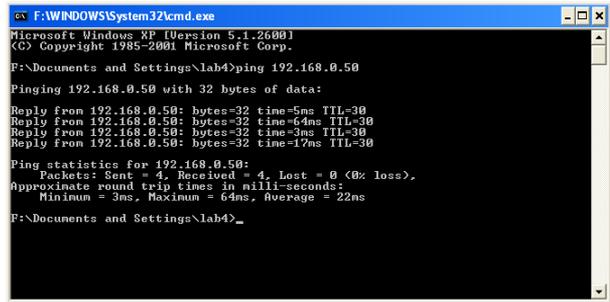
## Networking Basics (continued)

### Checking the Wireless Connection by Pinging

#### For Windows XP and 2000:

Go to **Start > Run > type cmd**. A window similar to *Fig. 9.25* will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP address** of the Wireless Router or Access Point.

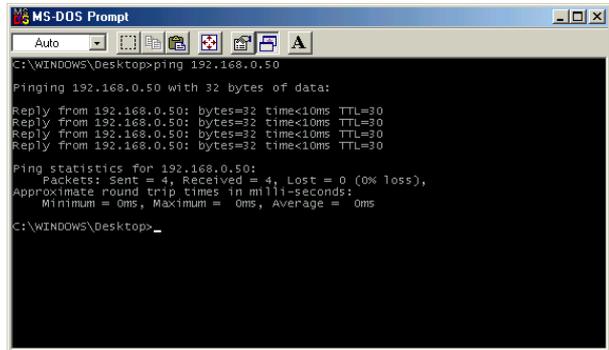
A good wireless connection will show four replies from the wireless router or access point, as shown.



```
ex F:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
F:\Documents and Settings\lab4>ping 192.168.0.50
Pinging 192.168.0.50 with 32 bytes of data:
Reply from 192.168.0.50: bytes=32 time=5ms TTL=30
Reply from 192.168.0.50: bytes=32 time=4ms TTL=30
Reply from 192.168.0.50: bytes=32 time=3ms TTL=30
Reply from 192.168.0.50: bytes=32 time=17ms TTL=30
Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 64ms, Average = 22ms
F:\Documents and Settings\lab4>
```

#### For Windows Me and 98:

Go to **Start > Run > type command**. A window similar to *Fig. 9.26* 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
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
C:\WINDOWS\Desktop>
```

### 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.

## Networking Basics (continued)

### Adding and Sharing Printers in Windows XP

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**

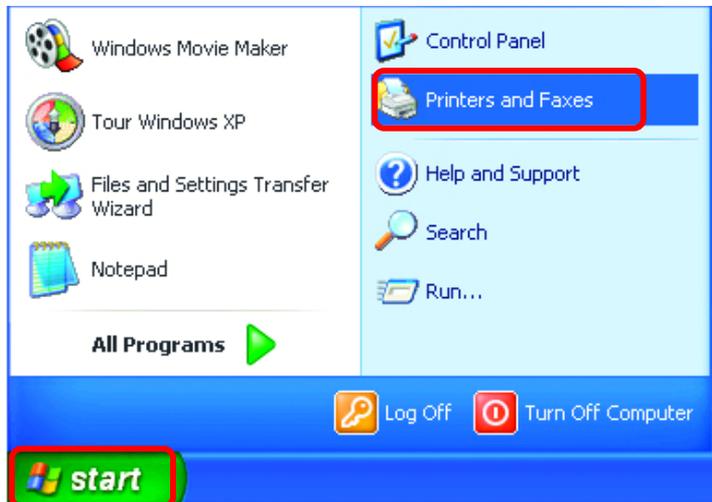
1. Adding a local printer
2. Sharing an network printer
3. Sharing an LPR printer

### 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.

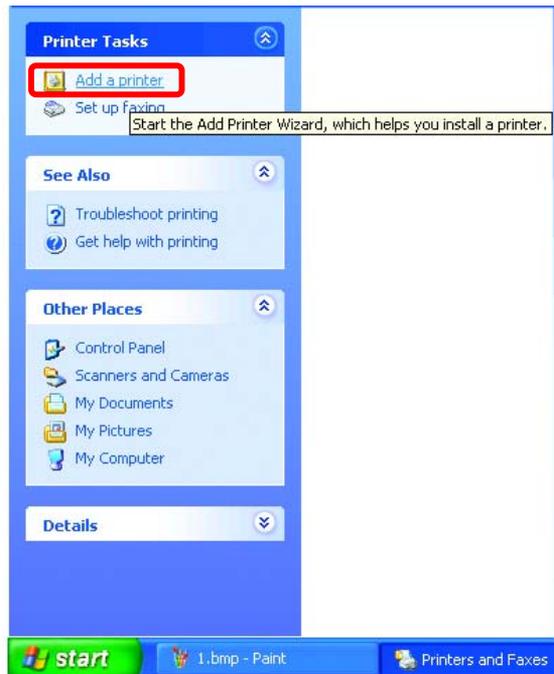
- Go to **Start> Printers and Faxes**



## Networking Basics (continued)

### Adding a local printer

- Click on **Add a printer**



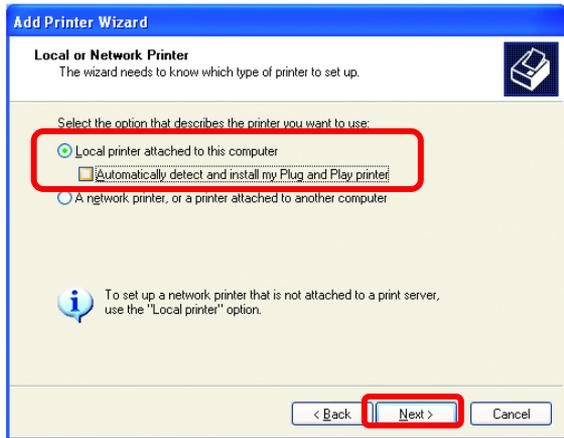
- Click **Next**



# Networking Basics (continued)

## Adding a local printer

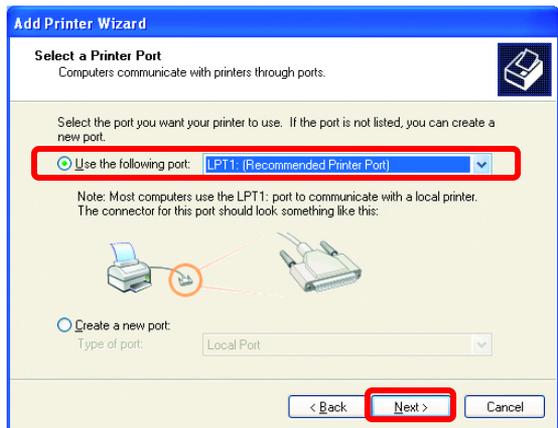
- Select **Local printer attached to this computer**
- *(Deselect **Automatically detect and install my Plug and Play printer** if it has been selected.)*
- Click **Next**



- 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**

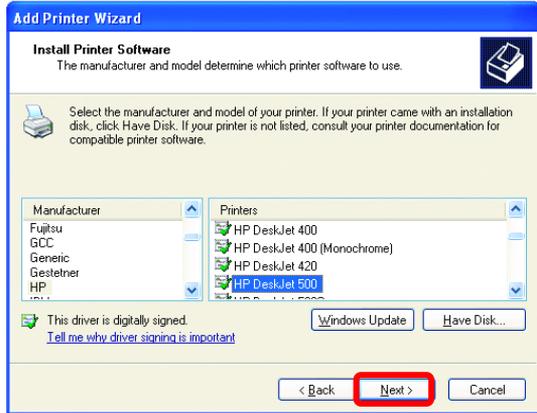


# Networking Basics (continued)

## Adding a local printer

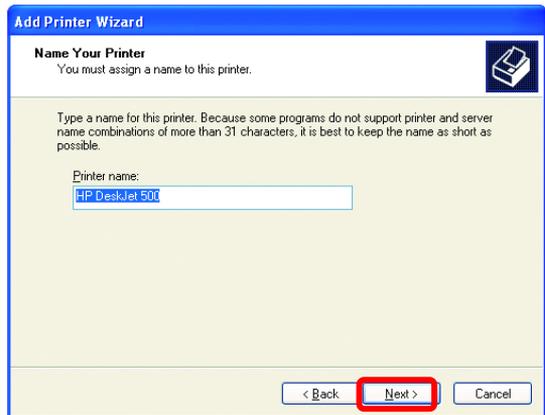
- Select and highlight the **correct driver** for your printer.
- Click **Next**

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



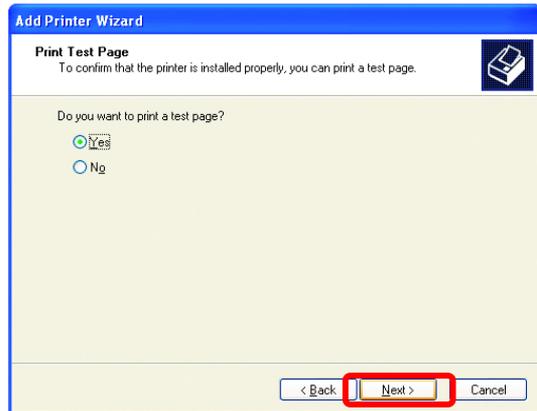
- At this screen, you can change the name of the printer (optional.)

- Click **Next**



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

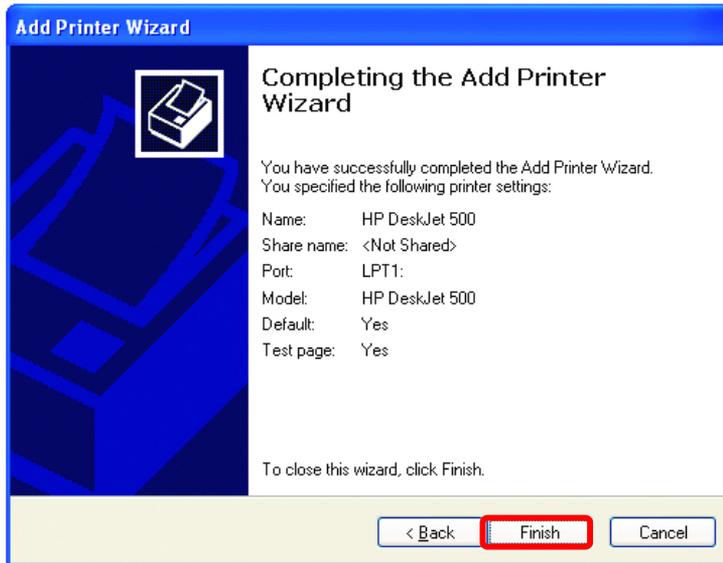
- Click **Next**



## Networking Basics (continued)

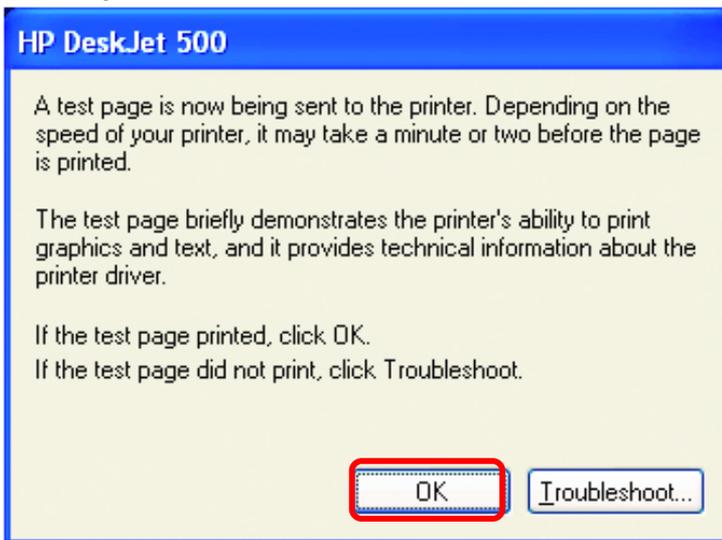
### Adding a local printer

This screen gives you information about your printer.



Click **Finish**

When the test page has printed,



Click **OK**

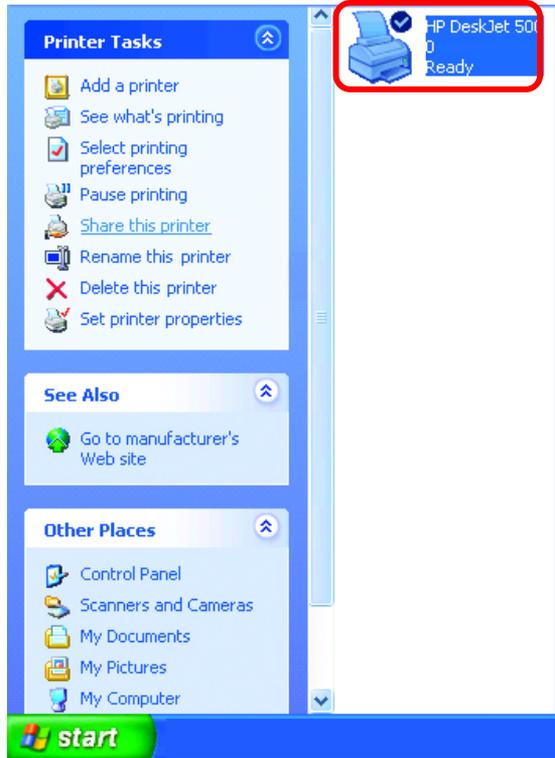
## Networking Basics (continued)

### Adding a local printer

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

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

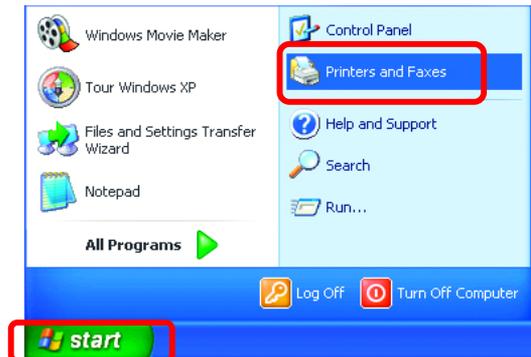
You have successfully added a local printer.



### 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 a printer on your network:

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



# Networking Basics (continued)

## Sharing a network printer

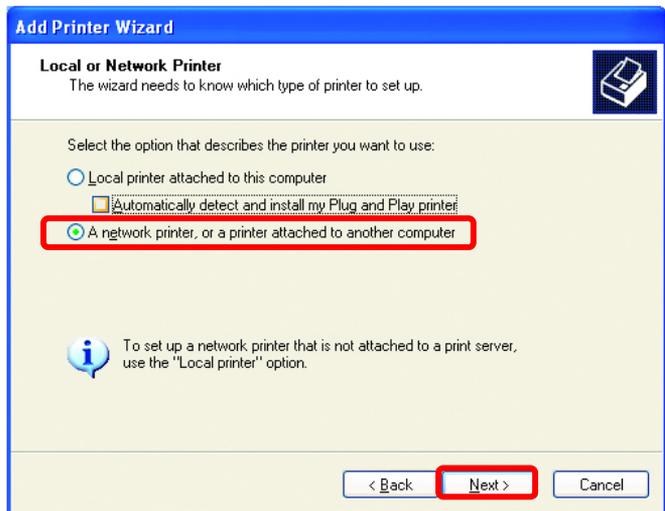
- Click on **Add a Printer**



- Click **Next**



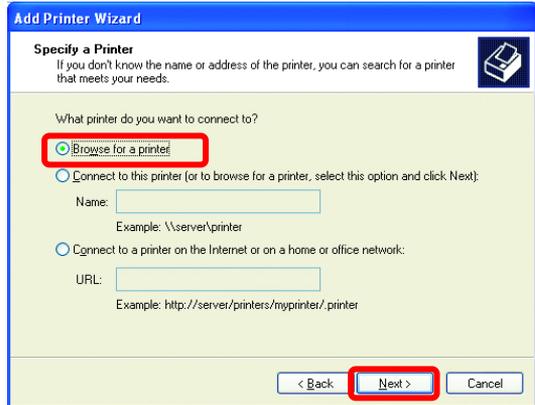
- Select **Network Printer**
- Click **Next**



# Networking Basics (continued)

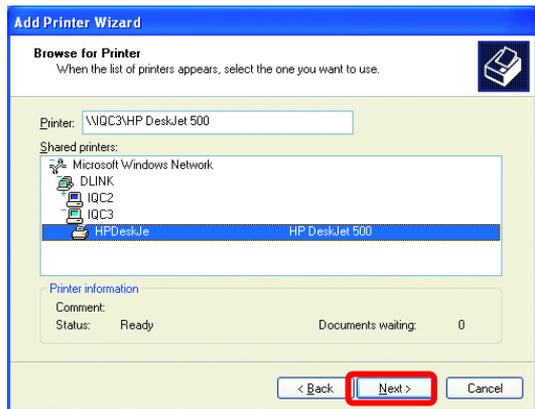
## Sharing a network printer

- Select **Browse for a printer**



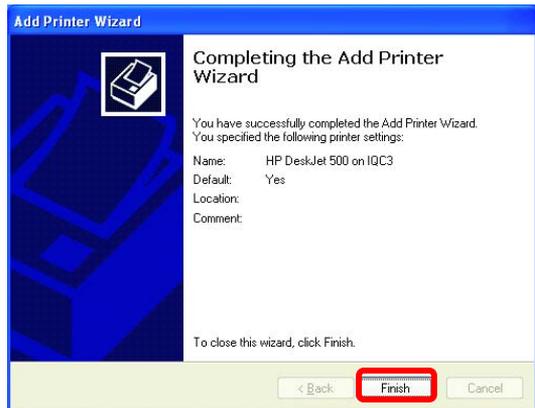
- Click **Next**

- Select the **printer** you would like to share.



- Click **Next**

- Click **Finish**

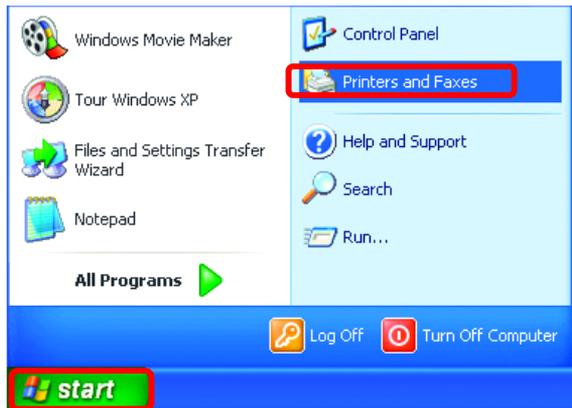


## Networking Basics (continued)

### Sharing a network printer

To check for proper installation:

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



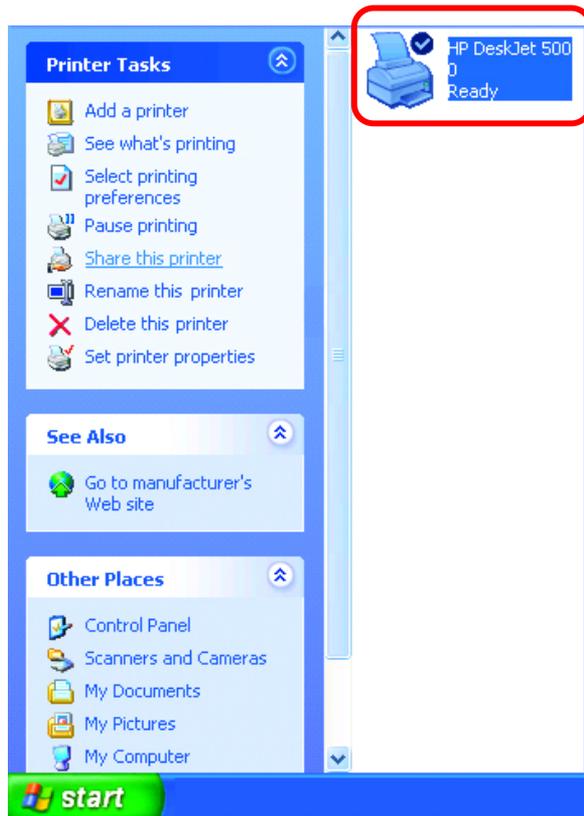
*The printer icon will appear at right, indicating proper installation.*

**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.



## Networking Basics (continued)

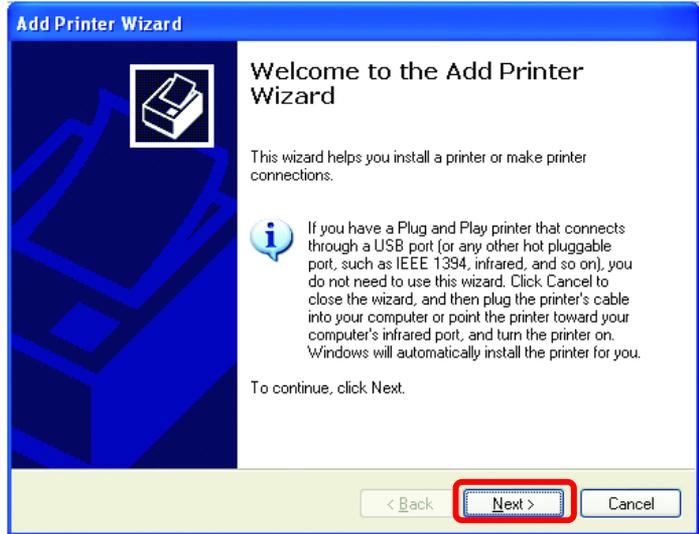
### Sharing an LPR printer

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**

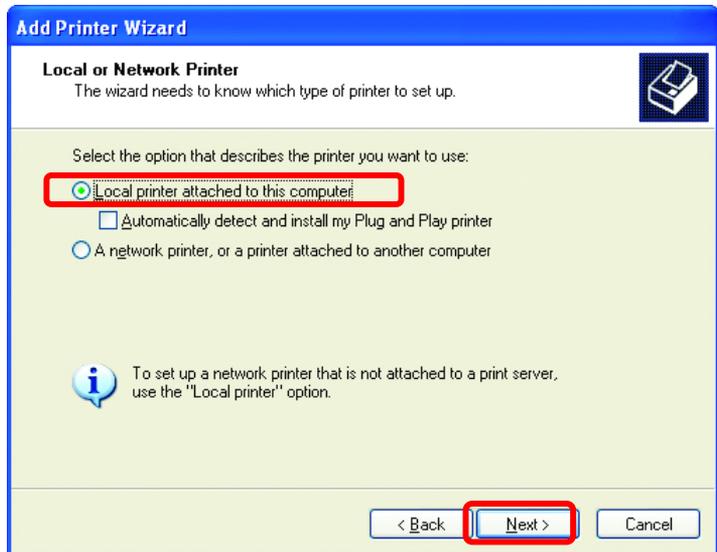
The screen to the right will display.

- Click **Next**



- Select **Local printer...**

- Click **Next**

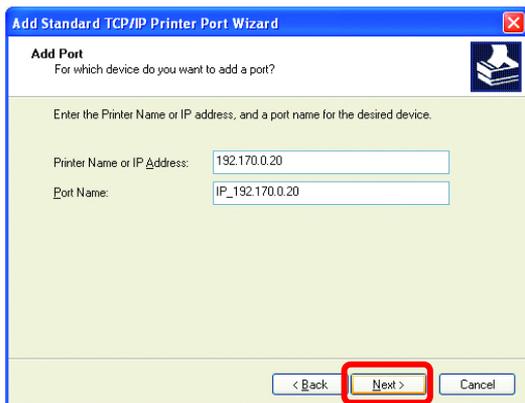
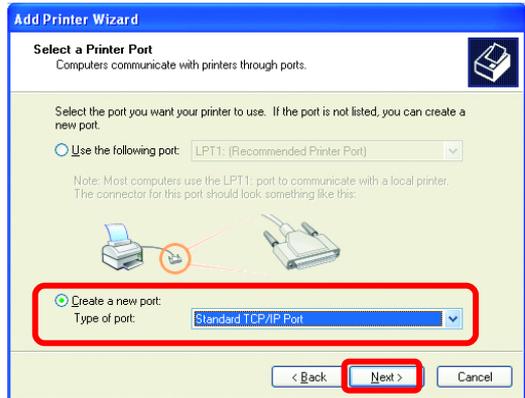


# Networking Basics (continued)

## Sharing an LPR printer

- Select **Create a new port**
- From the pull-down menu, select **Standard TCP/IP Port**, as shown.
- Click **Next**
- Please read the instructions on this screen.
- Click **Next**
- Enter the **Printer IP Address** and the **Port Name**, as shown.

- Click **Next**



## Networking Basics (continued)

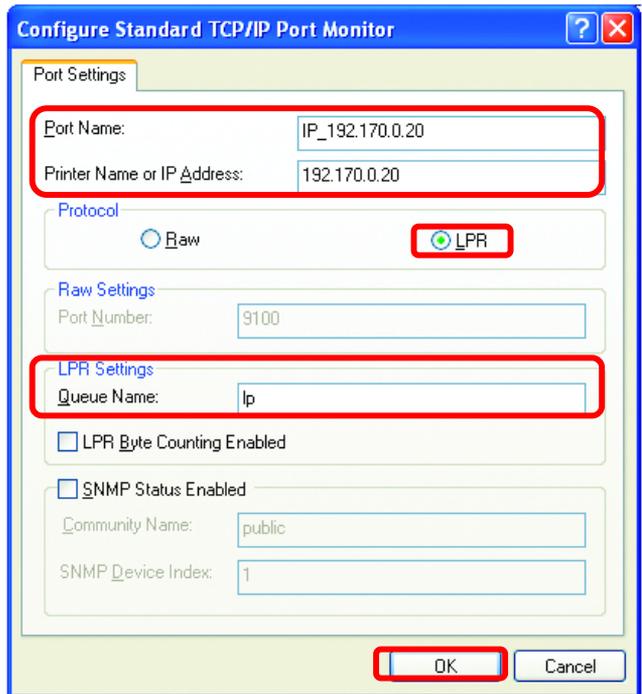
### Sharing an LPR printer

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



- Click **Settings**

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

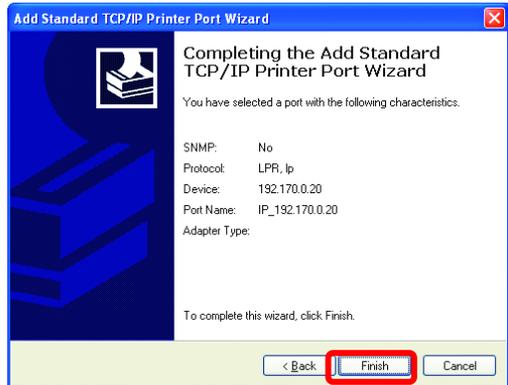


- Select **LPR**
- Enter a **Queue Name** (if your Print-Server/ Gateway has more than one port, you will need a **Queue name**.)
- Click **OK**

## Networking Basics (continued)

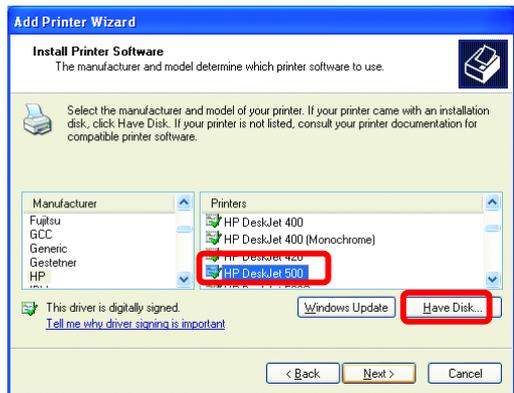
### Sharing an LPR printer

- This screen will show you information about your printer.



- Click **Finish**

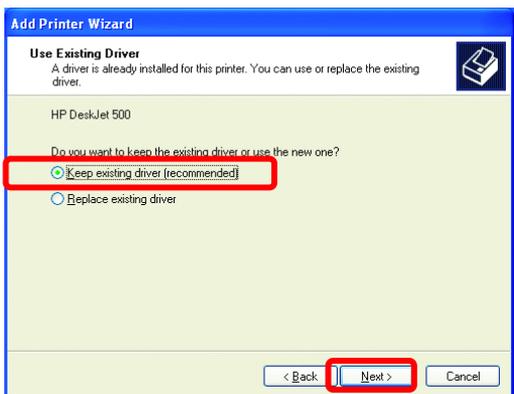
- Select the **printer** you are adding from the list of **Printers**.



- Insert the printer driver disk that came with your printer.
- Click **Have Disk**

If the printer driver is already installed,

- Select **Keep existing driver**



- Click **Next**

## Networking Basics (continued)

### Sharing an LPR printer

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

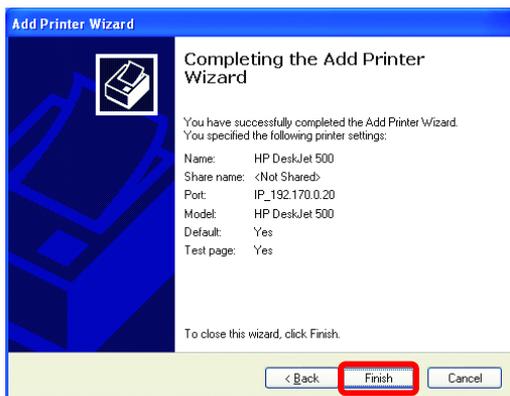
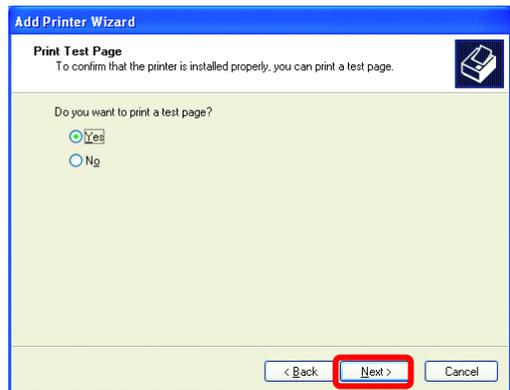
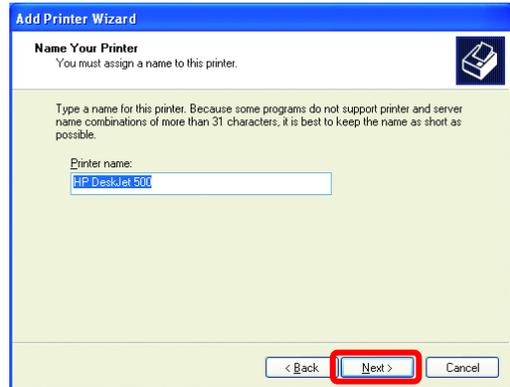
*Please remember the name of your printer. You will need this information when you use the **Add Printer Wizard** on the other computers on your network.*

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

- Click **Next**

*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.



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

## **Networking Basics (continued)**

### ***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.

## **8. Technical Specifications**

### **Standards**

- IEEE 802.11b • IEEE 802.3
- IEEE 802.3u • IEEE 802.3

### **VPN Pass Through / Multi-Sessions**

- PPTP
- L2TP
- IPSec

### **Advanced Firewall Features**

#### **Device Management**

Web-Based – Internet Explorer v5 or later; Netscape Navigator v4 or later; or other Java-enabled browsers.

#### **Wireless Data Rates**

With Automatic Fallback

- 22Mbps • 11Mbps
- 5.5Mbps • 2Mbps
- 1Mbps

#### **Encryption**

64/128/256-bit RC4

#### **Media Access Control**

CMSA/CA with ACK

#### **Wireless Frequency Range**

2.4GHz to 2.462GHz

## **Wireless Operating Range**

Indoors: Up to 328 feet  
(100 meters)

Outdoors: Up to 1,312 feet  
(400 meters)

## **Wireless Modulation Technology**

PBCC - Packet Binary

Convolutional Coding

Direct Sequence Spread

Spectrum (DSSS)

11-chip Barker sequence

## **Modulation Techniques**

- Barker (1Mbps/0db)
- Barker (2Mbps/3db)
- CCK (5.5Mbps/5.5db)
- PBCC (5.5 Mbps/1.5db)
- CCK (11Mbps/8.5db)
- PBCC (11Mbps/4.5db)
- PBCC (22Mbps/8.5db)

## **Wireless Transmit Power**

15dBm  $\pm$  2dB

## **External Antenna Type**

Single detachable reverse SMA

## **LEDs**

- Power
- M1
- M2
- WAN
- Local Network—10/100
- WLAN (Wireless Connection)

## **Operating Temperature**

32°F to 131°F ( 0°C to 55°C)

## **Humidity**

95% maximum (non-condensing)

**Power Input**

Ext. Power Supply DC 5V, 2.5A

**Safety & Emissions**

- FCC
- UL

**Dimensions**

- L = 7.56 inches (192mm)
- W = 4.65 inches (118mm)
- H = 1.22 inches (31mm)

**Weight**

~10.8 oz. (0.3kg)

## 9. Technical Support

### Technical Support

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

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

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

#### Tech Support for customers within the United States:

##### **D-Link Technical Support over the Telephone:**

(877) 453-5465

24 hours a day, seven days a week

##### **D-Link Technical Support over the Internet:**

<http://support.dlink.com>

email: support@dlink.com

#### Tech Support for customers within Canada:

##### **D-Link Technical Support over the Telephone:**

(800) 361-5265

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

##### **D-Link Technical Support over the Internet:**

<http://support.dlink.ca>

email: support@dlink.ca

# 10. Warranty and Registration (USA only)

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

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

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

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

- Hardware (excluding power supplies and fans) Three (3) Years
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

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

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

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

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

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.
- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the

product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.
- Return Merchandise Ship-To Address  
**USA:** 53 Discovery Drive, Irvine, CA 92618  
**Canada:** 2180 Winston Park Drive, Oakville, ON, L6H 5W1 (Visit <http://www.dlink.ca> for detailed warranty information within Canada)

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

**What Is Not Covered:** This limited warranty provided by D-Link does not cover: Products, if 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; 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. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this 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 NINETY (90) DAYS. 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.

**Limitation of Liability:** TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY

**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 the product owner 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.

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

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