

**D-Link** *Express* EtherNetwork™ DI-604  
4-Port Ethernet Broadband Router

**Manual**

Rev. 040903

**D-Link**

Building Networks for People

## **Contents**

Introduction.....	3
Package Contents.....	6
Hardware Description.....	7
Reset.....	8
Getting Started.....	9
Configuring the DI-604.....	10
Using the Configuration Wizard.....	11
Using the Configuration Menu.....	17
Troubleshooting.....	49
Networking Basics.....	55
Technical Specifications.....	82
Contacting Technical Support.....	84
Warranty and Registration.....	85

## Introduction

The D-Link Express EtherNetwork DI-604 is a 4-port Ethernet Broadband Router. The D-Link DI-604 enables users to quickly and easily share a high speed Internet connection. The D-Link DI-604 also incorporates many advanced features, traditionally found in more expensive routers.

After completing the steps outlined in the *Quick Installation Guide* (included in your package) you will have the ability to share a single Internet connection as well as sharing information and resources such as files and printers.

The DI-604 is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into an existing network. This Manual is designed to help you connect the D-Link Express EtherNetwork DI-604 to a high speed Internet connection and 4 Ethernet PC connections.

This manual provides a quick introduction to Broadband Router Technology, Firewalls, and Local Area Networking. Please take a moment to read through this manual and get acquainted these various technologies.

## Features and Benefits

### **Broadband Modem and IP Sharing**

Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection.

### **Ethernet Switch**

Allows you to quickly and easily share an Internet connection with multiple computers and devices.

### **VPN supported**

Supports multiple and concurrent IPsec and PPTP pass-through sessions, so multiple users behind the DI-604 can access corporate networks through various VPN clients more securely.

### **Advanced Firewall & Parental Control Features**

The Web-Based user interface displays a number of advanced network management features including:

### **Content Filtering**

Easily applied content filtering based on Mac Address, IP Address, URL and/or Domain Name.

### **Filter Scheduling**

These filters can also be scheduled to be active on certain days or for a duration of hours or minutes.

### **Network Address Translation**

NAT allows you to share a single IP Address and protects you from outside intruders gaining access to your private network.

### **DHCP Server Supported**

All of the networked computers can retrieve TCP/IP settings automatically from the DI-604.

### **Web-Based Management**

**DI-604** is configurable through any network computer's web browser using Netscape or Internet Explorer.

### **Access Control Supported**

Allows you to assign different access rights for different users.

### **Virtual Server Supported**

Enables you to expose WWW, FTP and other services on your LAN to be accessible to Internet users.

### **Special Application Supported**

Special applications requiring multiple connections, like Internet gaming, video conferencing, Internet telephony and so on. The DI-604 can sense the application type and open a multi-port tunnel for it.

### **DMZ Host Supported**

Allows a networked computer to be fully exposed to the Internet. This function is used when the Special Application feature is insufficient to allow an application to function correctly.

## **Technology Introduction**

### **Introduction to Broadband Router Technology**

A router is a device that forwards data packets from a source to a destination. Routers forward data packets using IP addresses and not a MAC address. A router will forward data from the Internet to a particular computer on your LAN.

The information that makes up the Internet gets moved around using routers. When you click on a link on a web page, you send a request to a

server to show you the next page. The information that is sent and received from your computer is moved from your computer to the server using routers. A router also determines the best route that your information should follow to ensure that the information is delivered properly.

A router controls the amount of data that is sent through your network by eliminating information that should not be there. This provides security for the computers connected to your router, because computers from the outside cannot access or send information directly to any computer on your network. The router determines which computer the information should be forwarded to and sends it. If the information is not intended for any computer on your network, the data is discarded. This keeps any unwanted or harmful information from accessing or damaging your network.

### **Introduction to Firewalls**

A firewall is a device that sits between your computer and the Internet that prevents unauthorized access to or from your network. A firewall can be a computer using firewall software or a special piece of hardware built specifically to act as a firewall. In most circumstances, a firewall is used to prevent unauthorized Internet users from accessing private networks or corporate LAN's and Intranets.

A firewall watches all of the information moving to and from your network and analyzes each piece of data. Each piece of data is checked against a set of criteria that the administrator configures. If any data does not meet the criteria, that data is blocked and discarded. If the data meets the criteria, the data is passed through. This method is called packet filtering.

A firewall can also run specific security functions based on the type of application or type of port that is being used. For example, a firewall can be configured to work with an FTP or Telnet server. Or a firewall can be configured to work with specific UDP or TCP ports to allow certain applications or games to work properly over the Internet.

### **Introduction to Local Area Networking**

Local Area Networking (LAN) is the term used when connecting several computers together over a small area such as a building or group of buildings. LAN's can be connected over large areas. A collection of LAN's connected over a large area is called a Wide Area Network (WAN).

A LAN consists of multiple computers connected to each other. There are many types of media that can connect computers together. The most common media is CAT5 cable (UTP or STP twisted pair wire.) On the other hand, wireless networks do not use wires; instead they communicate over radio waves. Each computer must have a Network Interface Card (NIC), which communicates the data between computers. A NIC is usually

a 10Mbps network card, or 10/100Mbps network card, or a wireless network card.

Most networks use hardware devices such as hubs or switches that each cable can be connected to in order to continue the connection between computers. A hub simply takes any data arriving through each port and forwards the data to all other ports. A switch is more sophisticated, in that a switch can determine the destination port for a specific piece of data. A switch minimizes network traffic overhead and speeds up the communication over a network.

Networks take some time in order to plan and implement correctly. There are many ways to configure your network. You may want to take some time to determine the best network set-up for your needs.

## Package Contents

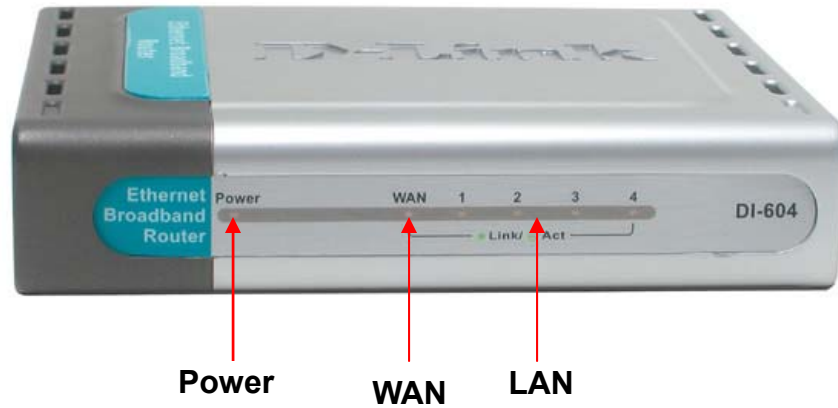


- DI-604 Ethernet Broadband Router
- Power Adapter
- Ethernet Cable
- Quick Installation Guide
- Manual on CD

**Note:** Using a power supply with a different voltage rating will damage and void the warranty for this product. If any of the above items are missing, please contact your reseller.

# Hardware Description

## Front Panel



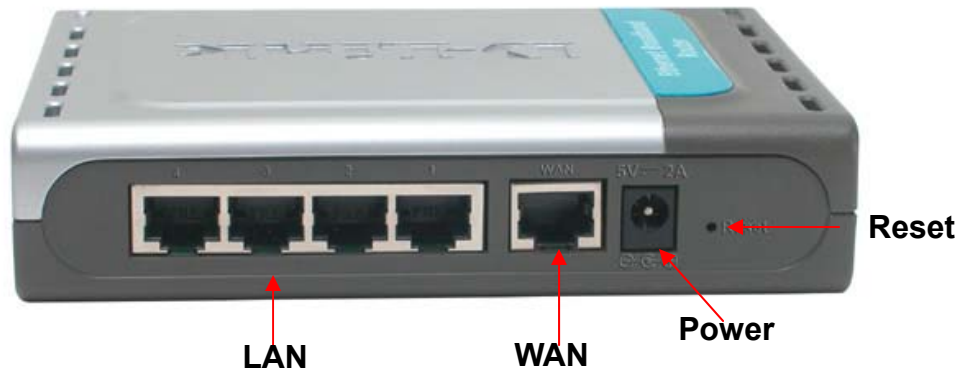
**Power** Power indicator will light Green.

**WAN** WAN status indicator will light Green when there is good physical WAN connection

**LAN Link/Act.** Link status indicators light Green. The LED flickers when the corresponding port is sending or receiving data.

## Hardware Description

### Rear Panel



**Reset** Used to restore the DI-604 back to factory default settings.

**LAN PORTS 1-4** LAN port sockets (CAT5 Ethernet RJ-45 cable). The LED glows steadily when a port is connected to a hub, switch or network-adaptor-equipped computer in your local area network (LAN.)

**WAN** WAN port socket (CAT5 Ethernet RJ-45 cable). This is where you will connect to your Cable or DSL modem.

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

## Reset

To reset the system settings to factory defaults, please follow these steps:

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

The DI-604 will then automatically reboot itself.



# Getting Started

## Installation Location

The DI-604 can be positioned at any convenient place in your office or house. No special wiring or cooling requirements are needed. However, you should comply with the following guidelines:

- Place the DI-604 on a flat horizontal plane.
- Keep away from any heating devices.
- Do not place in a dusty or wet environment.

The recommended operational specifications of the DI-604 are:

Temperature	32° F ~ 131° F
Humidity	5 % ~ 90 %

In addition, remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the hardware.

## Network Settings

To use the DI-604 correctly, you have to properly configure the network settings of your computers. The default *IP address* of the DI-604 is **192.168.0.1**, and the default *subnet mask* is **255.255.255.0**. These addresses can be changed as needed, but the default values are used in this manual. If the TCP/IP environment of your computer has not yet been configured, you can refer to ***Configuring Your PCs to Connect to the DI-604*** to configure it.

For example:

1. Configure your computer *IP* as 192.168.0.3, *subnet mask* as 255.255.255.0 and *gateway* as 192.168.0.1

*Or more conveniently*

2. Configure your computers to obtain TCP/IP settings automatically from the DHCP server feature of the DI-604

Since the IP address of the DI-604 is 192.168.0.1, the IP address of your computer must be 192.168.0.X (where "X" is a number between 2 and 254.) Each computer on your network must have a different IP address within that range. The default gateway must be 192.168.0.1 (the IP address of the DI-604).

## Configuring the DI-604

The DI-604 provides an embedded Web-based management utility making it operating system independent. You can configure your DI-604 through the Netscape Communicator or Internet Explorer browser in MS Windows, Macintosh, Linux or UNIX based platforms. All that is needed is a web browser such as Internet Explorer or Netscape Navigator version 4 and higher with Java Script enabled.

### Start-up and Log in

Activate your web browser and type in the IP address of the DI-604 into the *Location* (for Netscape) or *Address* (for IE) field and press "Enter." The default IP address of the DI-604 is **192.168.0.1**

For example: **http://192.168.0.1**



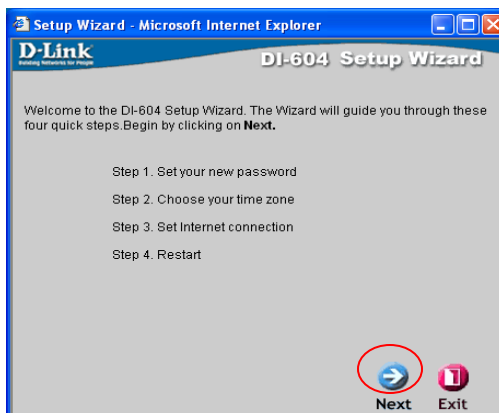
After the connection is established, the logon screen will pop up.

To log in as an administrator, enter the username of "**admin**" and the password (there are no default password, leave it blank). Click the **OK** button. If the password is correct, the web-management interface will appear.

# Using the Configuration Wizard

The Setup Wizard screen will appear. Follow the Wizard step by step to quickly configure the DI-604.

Click **Next**



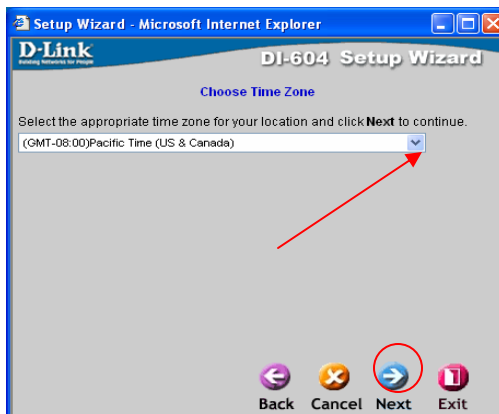
It is recommended that you change the admin password for security purposes. Enter in your new password. Enter it in a second time for verification.

Click **Next**



Click on the drop down box arrow and select the appropriate time zone for your location.

Click **Next**



There will be three options to select from. Please select the appropriate option that is used by your ISP.

**Dynamic IP Address:** (ex: Cable users) Select this option to obtain an IP address automatically from your ISP.

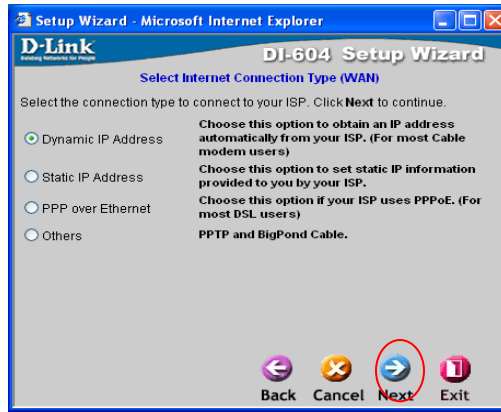
Please see Dynamic IP Address section.

**Static IP Address:** Select this option to manually input the IP address that your ISP assigned to you. Please see Static IP Address section.

**PPP over Ethernet (PPPoE):**

(ex: DSL users) Select this option if your ISP requires the use of PPPoE to connect to their services. Please see PPPoE section.

**Others (PPTP and BigPond Cable):** Select this option if your ISP requires the use of PPTP to connect to their services or your ISP is BigPond Cable. Please see PPTP section, or follow BigPond Cable's configuration guide.



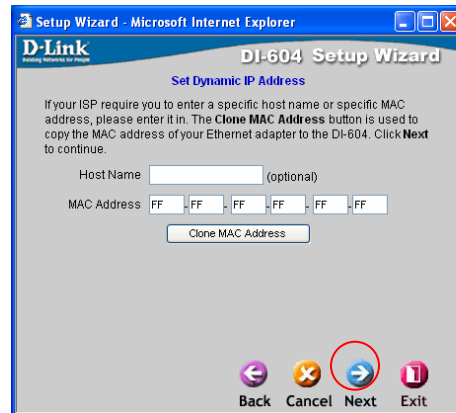
Once you have made the appropriate selection, click **Next**.

### Dynamic IP Address

If you selected **Dynamic IP Address**, you will see the following page.

If your ISP requires you to enter a specific host name or specific MAC address, please enter it in. The CLONE MAC Address button is used to copy the MAC address of your Ethernet adapter to the DI-604 WAN interface.

Click **Next**



## Static IP Address

If you selected **Static IP Address**, you will see the following page.

Enter in the IP address information provided to you by your ISP. You will need to enter in WAN IP Address, WAN Subnet Mask, WAN Gateway, and Primary DNS.

Click **Next**



The screenshot shows the 'Set Static IP Address' page of the D-Link DI-604 Setup Wizard. The page is titled 'D-Link DI-604 Setup Wizard Set Static IP Address'. It contains the following fields:

- WAN IP Address: 0.0.0.0
- WAN Subnet Mask: 0.0.0.0
- WAN Gateway: 0.0.0.0
- Primary DNS: 0.0.0.0
- Secondary DNS: 0.0.0.0

At the bottom, there are four buttons: Back, Cancel, Next, and Exit. The 'Next' button is circled in red.

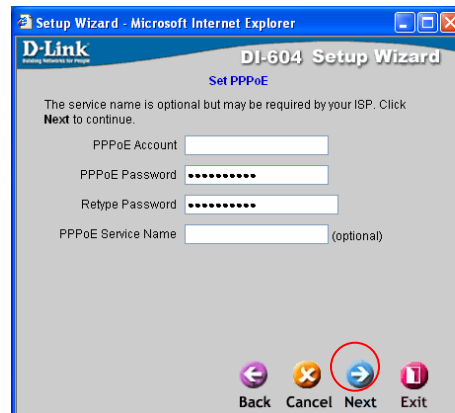
## PPPoE

If you select PPP over Ethernet (PPPoE), you will see the following page.

Enter in the username and password provided to you by your ISP.

Enter in the Service Name if your ISP uses a Service Name for the PPPoE connection.

Click **Next**



The screenshot shows the 'Set PPPoE' page of the D-Link DI-604 Setup Wizard. The page is titled 'D-Link DI-604 Setup Wizard Set PPPoE'. It contains the following fields:

- PPPoE Account: [text input]
- PPPoE Password: [password input]
- Retype Password: [password input]
- PPPoE Service Name: [text input] (optional)

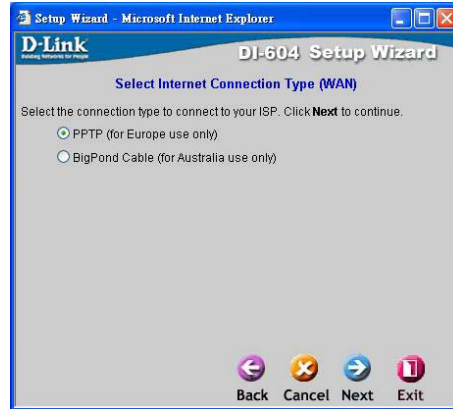
At the bottom, there are four buttons: Back, Cancel, Next, and Exit. The 'Next' button is circled in red.

**NOTE:** Please be sure to remove any existing PPPoE client software installed on your computers.

## Others

If you select Others (PPTP and BigPond Cable), you will see the following page.

Select the WAN type provided to you by your ISP.



If you select **PPTP**, you will see the following page.

Enter in the IP address information provided to you by your ISP. You will need to enter in My IP Address, My Subnet Mask, Server IP Address, and Primary DNS.

Enter in the Account and password provided to you by your ISP.

Click **Next**



If you select **BigPond Cable**, you will see the following page.

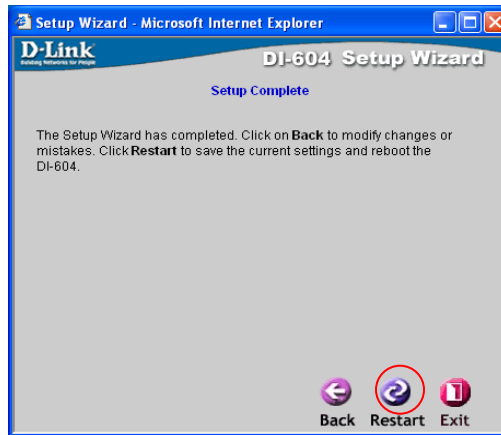
Enter in the Account and password provided to you by your ISP.

Click **Next**

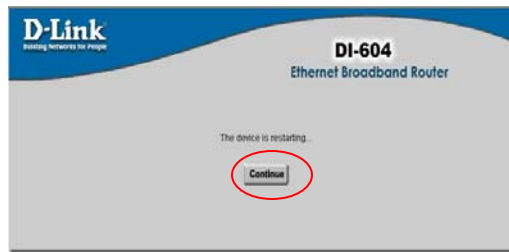


The screenshot shows a web browser window titled "Setup Wizard - Microsoft Internet Explorer". The page header includes the D-Link logo and "DI-604 Setup Wizard". The main heading is "Set Dynamic IP Address for BigPond Cable". Below this, there are four input fields: "Account" (empty), "Password" (filled with asterisks), "Retype Password" (filled with asterisks), and "Login Server" (empty) with "(optional)" to its right. At the bottom right, there are four buttons: "Back" (left arrow), "Cancel" (X), "Next" (right arrow), and "Exit" (stop sign).

At this point, the Setup Wizard has completed. Click **Restart** to save the settings and reboot the DI-604.



The screenshot shows the same web browser window, but the page content has changed. The heading is "Setup Complete". Below this, a message reads: "The Setup Wizard has completed. Click on **Back** to modify changes or mistakes. Click **Restart** to save the current settings and reboot the DI-604." At the bottom right, there are three buttons: "Back" (left arrow), "Restart" (refresh/circular arrow), and "Exit" (stop sign). The "Restart" button is circled in red.



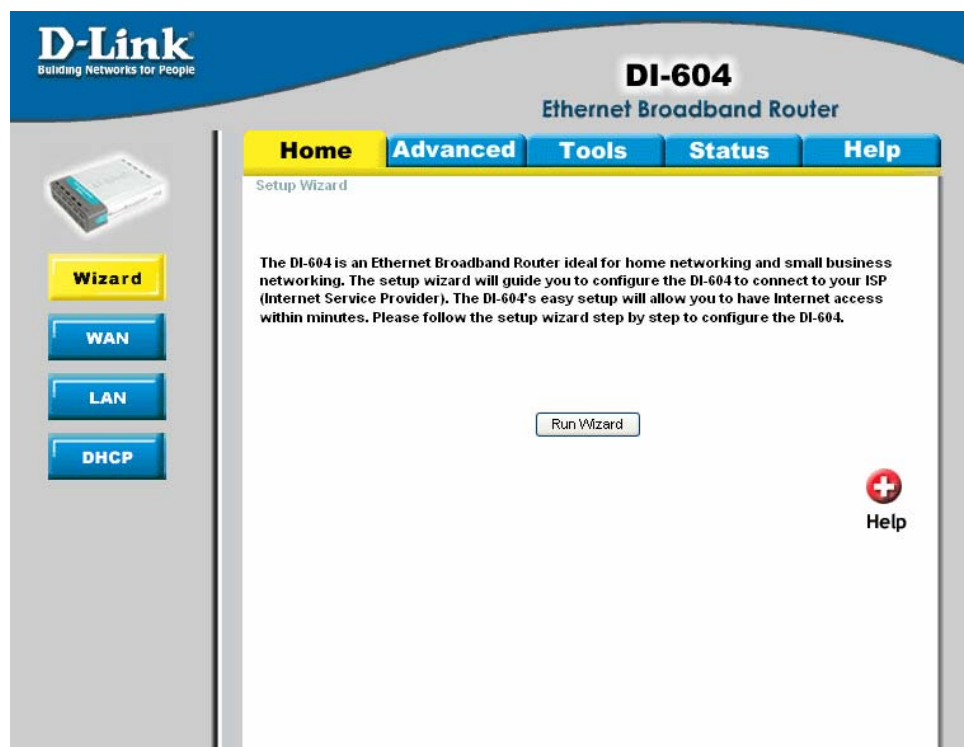
Your setup of the DI-604 is now complete. You should be able to access the Internet.



## Using the Configuration Menu

### 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-604. 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.

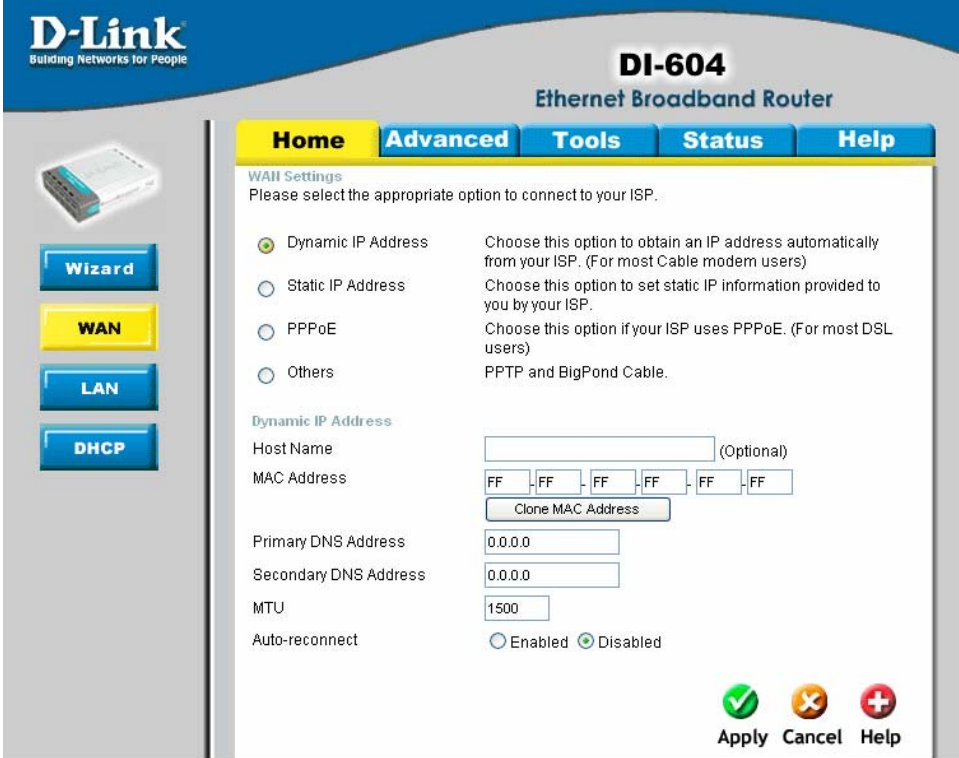


### WAN

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, PPPoE, and Others***. Select the appropriate option and fill in the information needed to connect to your ISP.

## HOME > WAN > DYNAMIC IP Address



The screenshot shows the configuration interface for a D-Link DI-604 Ethernet Broadband Router. The page is titled "DI-604 Ethernet Broadband Router" and has a navigation menu with "Home", "Advanced", "Tools", "Status", and "Help". The "Advanced" tab is selected, and the "WAN" sub-tab is active. The "WAN Settings" section is displayed, with a sub-section for "Dynamic IP Address".

**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 and BigPond Cable.

**Dynamic IP Address**

Host Name:  (Optional)

MAC Address:

Primary DNS Address:

Secondary DNS Address:

MTU:

Auto-reconnect:  Enabled  Disabled

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.

The screenshot shows the configuration page for a D-Link DI-604 Ethernet Broadband Router. The page is titled "DI-604 Ethernet Broadband Router" and has a navigation menu with "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected. On the left side, there are four buttons: "Wizard", "WAN" (highlighted in yellow), "LAN", and "DHCP". The main content area is titled "WAN Settings" and contains the following text: "Please select the appropriate option to connect to your ISP". There are three radio button options: "Dynamic IP Address" (unselected), "Static IP Address" (selected), and "PPPoE" (unselected). Each option has a description: "Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)", "Choose this option to set static IP information provided to you by your ISP.", and "Choose this option if your ISP uses PPPoE. (For most DSL users)". Below the options is a section titled "Static IP" with five input fields: "IP Address" (with "(assigned by your ISP)" to its right), "Subnet Mask", "ISP Gateway Address", "Primary DNS Address", and "Secondary DNS Address" (with "(optional)" to its right). 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).

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 DNS Address:** Primary DNS (Domain Name Server) IP provided by your ISP

**Secondary DNS Address:** optional

The screenshot shows the D-Link DI-604 Ethernet Broadband Router configuration interface. The 'WAN' tab is selected, and the 'PPPoE' option is chosen under 'WAN Settings'. The 'Dynamic PPPoE' option is selected under 'PPP over Ethernet'. The form includes fields for User Name, Password, Retype Password, Service Name (Optional), IP Address, Primary DNS Address, Secondary DNS Address, Maximum Idle Time (0 Minutes), and MTU (1492).

 Please be sure to remove any existing PPPoE Client Software installed on your computers.

**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.

**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.

[Others](#)



Enter in the IP address information provided to you by your ISP. You will need to enter in My IP Address, My Subnet Mask, Server IP Address, Primary DNS, the Account and password provided to you by your ISP.

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

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

**Server IP Address:** Server IP Address provided by your ISP.

**PPTP Account:** Your PPTP username provided by your ISP

**PPTP password:** Your PPTP password provided by your ISP

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

**Connection ID:** Connection ID provided by your ISP (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.

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



- [Wizard](#)
- [WAN](#)
- [LAN](#)
- [DHCP](#)

**Home** **Advanced** **Tools** **Status** **Help**

**WAN Settings**  
Please select the appropriate option to connect to your ISP.

<input type="radio"/> Dynamic IP Address	Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
<input type="radio"/> Static IP Address	Choose this option to set static IP information provided to you by your ISP.
<input type="radio"/> PPPoE	Choose this option if your ISP uses PPPoE. (For most DSL users)
<input checked="" type="radio"/> Others	PPTP and BigPond Cable.
<input type="radio"/> PPTP	(for Europe use only)
<input checked="" type="radio"/> BigPond Cable	(for Australia use only)

**Dynamic IP Address for BigPond**




User Name

Password

Retype Password

Login Server IP  (Optional)

Auto-reconnect  Enabled  Disabled

    
**Apply** **Cancel** **Help**

Enter in the UserName, Password, Login Server IP provided to you by your ISP.

**UserName:** User Name provided to you by your ISP

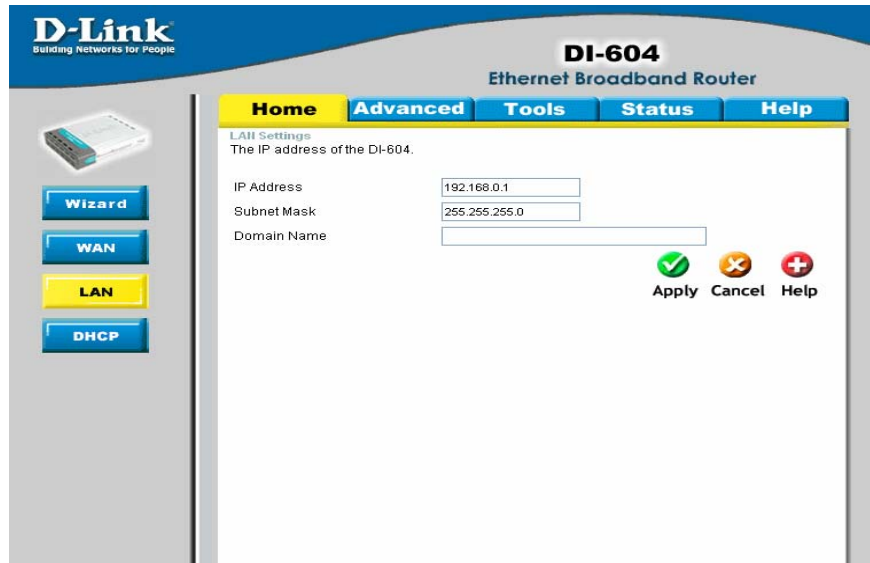
**Password:** Password provided to you by your ISP

**Retype Password:** Re-enter BigPond Cable password

**Login Server IP:** Login Server IP provided to you by your ISP (Optional).

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





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-604. 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-604 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 WEEK

**Static DHCP**  
Static DHCP is used to allow DHCP server to assign same IP to specific MAC address.

Enabled  Disabled

Name

IP Address 192.168.0.

MAC Address -----

DHCP Client -- select one --

Apply  Cancel  Help

**Static DHCP Clients List**

Name	IP Address	MAC Address
------	------------	-------------

DHCP stands for Dynamic Host Control Protocol. The DI-604 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-604. 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

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Home **Advanced** Tools Status Help

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

Enabled  Disabled

Name

Private IP 192.168.0.

Protocol Type TCP

Private Port

Public Port

Schedule  Always

From Time :00 To :00  
day  to

Apply Cancel Help

Virtual Server List

Name	Private IP	Protocol	Schedule	
<input type="checkbox"/> Virtual Server FTP	0.0.0.0	TCP 21 / 21	always	<input type="checkbox"/>
<input type="checkbox"/> Virtual Server HTTP	0.0.0.0	TCP 80 / 80	always	<input type="checkbox"/>
<input type="checkbox"/> Virtual Server HTTPS	0.0.0.0	TCP 443 / 443	always	<input type="checkbox"/>
<input type="checkbox"/> Virtual Server DNS	0.0.0.0	TCP 53 / 53	always	<input type="checkbox"/>

The DI-604 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 network.

The DI-604 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-604 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-604 redirects the external service request to the appropriate server within the LAN network.

The DI-604 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 service that is 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 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 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 > APPLICATION**

The screenshot shows the configuration interface for a D-Link DI-604 Ethernet Broadband Router. The 'Advanced' tab is selected, and the 'Application' sub-tab is active. The 'Special Application' section is visible, which is used for configuring applications that require multiple connections. The interface includes a sidebar with navigation buttons for Virtual Server, Application, Filter, Firewall, DDNS, and DMZ. The main configuration area has a 'Special Application' section with radio buttons for 'Enabled' and 'Disabled'. Below this are fields for 'Name', 'Trigger Port', 'Trigger Type' (set to TCP), 'Public Ports', and 'Public Type' (set to TCP). At the bottom right of this section are 'Apply', 'Cancel', and 'Help' buttons. Below the configuration fields is a 'Special Application List' table with columns for Name, Trigger, and Public Port, listing various applications like Battle.net, Dialpad, ICU II, MSN Gaming Zone, PC-to-Phone, and QuickTime.

Name	Trigger	Public Port
<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"/> QuickTime	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-604. 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-604 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.

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Home **Advanced** Tools Status Help

Filter  
Filters are used to allow or deny LAN users from accessing the Internet.

IP Filters  URL Blocking  
 MAC Filters  Domain Blocking

IP Filter  
Use IP Filters to deny LAN IP addresses access to the Internet.

Enabled  Disabled

IP Address: [ ] - [ ]  
Port Range: [ ] - [ ]  
Protocol: TCP  
Schedule:  Always  
 From Time [00]:[00] To [00]:[00]  
day [Sun] to [Sun]

Apply Cancel Help

IP Filter List

	IP Range	Protocol	Schedule	
<input type="checkbox"/>	*	TCP 20-21	always	
<input type="checkbox"/>	*	TCP 80	always	

## Filter

Filters are used to deny or allow LAN computers from accessing the Internet. The DI-604 can be setup to deny internal computers by their IP or MAC addresses. The DI-604 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.

**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.

## ADVANCED > FILTER > MAC FILTERS

The screenshot shows the D-Link DI-604 Ethernet Broadband Router web interface. The top navigation bar includes 'Home', 'Advanced' (selected), 'Tools', 'Status', and 'Help'. On the left sidebar, there are buttons for 'Virtual Server', 'Application', 'Filter' (highlighted in yellow), 'Firewall', 'DDNS', and 'DMZ'. The main content area is titled 'Filter' and explains that filters are used to allow or deny LAN users from accessing the Internet. It offers three options: 'IP Filters', 'URL Blocking', and 'MAC Filters' (selected). Below this, the 'MAC Filters' section explains that MAC addresses are used to allow or deny network access. It provides three radio button options: 'Disabled MAC Filters' (selected), 'Only allow computers with MAC address listed below to access the network', and 'Only deny computers with MAC address listed below to access the network'. The form includes a 'Name' text box, a 'MAC Address' field with six input boxes, a 'DHCP Client' dropdown menu, and a 'Clone' button. At the bottom right, there are 'Apply', 'Cancel', and 'Help' buttons with corresponding icons. A 'MAC Filter List' table is partially visible at the bottom, with columns for 'Name' and 'MAC Address'.

Use **MAC Filters** to allow or deny LAN 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.



## ADVANCED > FILTER > URL BLOCKING

The screenshot displays the D-Link DI-604 Ethernet Broadband Router's web management interface. The top navigation bar includes 'Home', 'Advanced' (selected), 'Tools', 'Status', and 'Help'. A sidebar on the left contains icons for 'Virtual Server', 'Application', 'Filter' (highlighted in yellow), 'Firewall', 'DDNS', and 'DMZ'. The main content area is titled 'Filter' and explains that filters are used to allow or deny LAN users from accessing the Internet. It offers four filter types: IP Filters, URL Blocking (selected), MAC Filters, and Domain Blocking. Under the 'URL Blocking' section, there are options for 'Enabled' and 'Disabled' (selected). Below these options is a text input field for keywords, which currently contains '- Empty -'. A 'DELETE' button is positioned to the right of the input field. At the bottom right of the page, there are three buttons: 'Apply' (with a green checkmark icon), 'Cancel' (with a yellow 'X' icon), and 'Help' (with a red plus icon).

**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.

## ADVANCED > FILTER > DOMAIN BLOCKING

The screenshot displays the web interface of a D-Link DI-604 Ethernet Broadband Router. The top navigation bar includes 'Home', 'Advanced' (selected), 'Tools', 'Status', and 'Help'. On the left sidebar, there are buttons for 'Virtual Server', 'Application', 'Filter' (highlighted in yellow), 'Firewall', 'DDNS', and 'DMZ'. The main content area is titled 'Filter' and contains the following sections:

- Filter:** A description states 'Filters are used to allow or deny LAN users from accessing the Internet.' Below this are four radio button options: 'IP Filters', 'URL Blocking', 'MAC Filters', and 'Domain Blocking' (which is selected).
- Domain Blocking:** A section with three radio button options: 'Disabled' (selected), 'Allow users to access all domains except "Blocked Domains"', and 'Deny users to access all domains except "Permitted Domains"'. The 'Deny' option is currently disabled.
- Permitted Domains:** A text input field is present, with a dropdown menu below it showing '- Empty -' and a 'DELETE' button to its right.
- Blocked Domains:** A text input field is present, with a dropdown menu below it showing '- Empty -' and a 'DELETE' button to its right.

**Domain Blocking** is used to allow or deny LAN 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.

## ADVANCED > FIREWALL

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Home **Advanced** Tools Status Help

Firewall Rules  
Firewall Rules can be used to allow or deny traffic from passing through the DI-604.

Enabled  Disabled

Name:

Action:  Allow  Deny

Interface: \*  IP Start:  IP End:  Protocol:  Port Range:  -

Source: \*  Destination: \*  TCP  -

Schedule:  Always  From Time 00:00 To 00:00 day Sun to Sun

Apply  Cancel  Help

Firewall Rules List

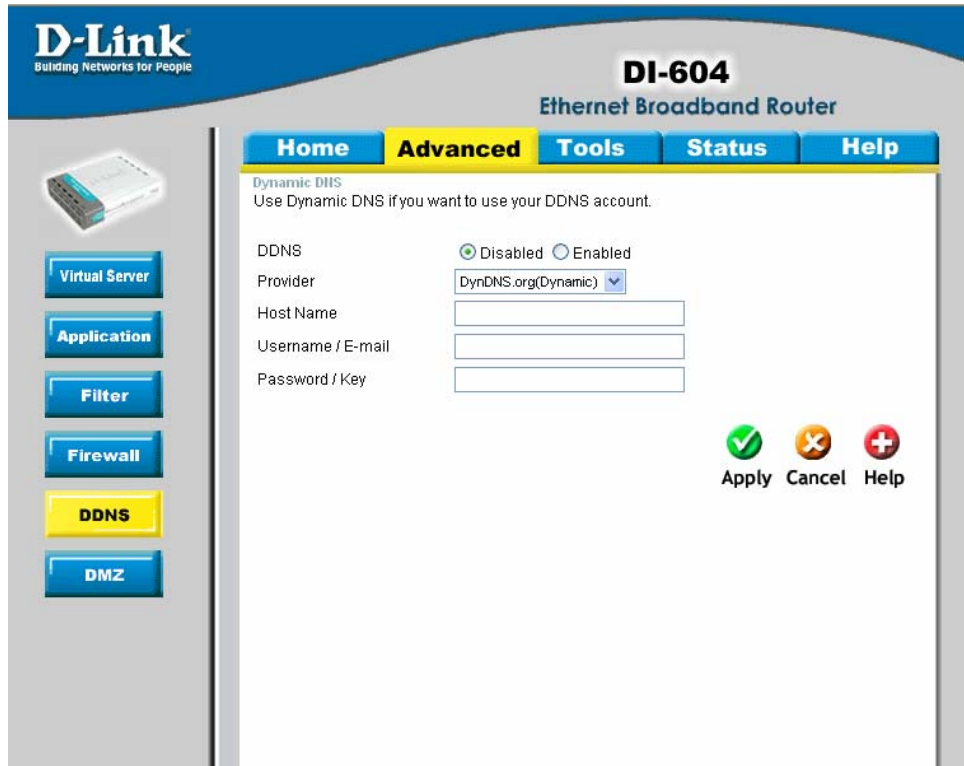
Action Name	Source	Destination	Protocol	
<input type="checkbox"/> Allow Allow to Ping WAN port	WAN,*	LAN,192.168.0.1	ICMP,8	
<input type="checkbox"/> Deny Default	**	LAN,*	**	
<input type="checkbox"/> Allow Default	LAN,*	**	**	

**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-604. 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 (the highest priority) to the bottom (the lowest priority.)

**Note: The DI-604 MAC Address filtering rules have precedence over the Firewall Rules.**

## ADVANCED > DDNS



The screenshot shows the web interface of a D-Link DI-604 Ethernet Broadband Router. The top navigation bar includes 'Home', 'Advanced' (highlighted), 'Tools', 'Status', and 'Help'. On the left sidebar, there are buttons for 'Virtual Server', 'Application', 'Filter', 'Firewall', 'DDNS' (highlighted), and 'DMZ'. The main content area is titled 'Dynamic DNS' and contains the following configuration options:

- DDNS:  Disabled  Enabled
- Provider: DynDNS.org(Dynamic) (dropdown menu)
- Host Name: [text input field]
- Username / E-mail: [text input field]
- Password / Key: [text input field]

At the bottom right of the configuration area, there are three buttons: 'Apply' (with a green checkmark icon), 'Cancel' (with a red X icon), and 'Help' (with a red plus icon).

**Dynamic DNS** (Domain Name Service) is a method of keeping a domain name linked to a changing (dynamic) IP address. With most Cable and DSL connections, you are assigned a dynamic IP address and that address is used only for the duration of that specific connection. With the DI-604, you can setup your DDNS service and the DI-604 will automatically update your DDNS server every time it receives a different IP address.

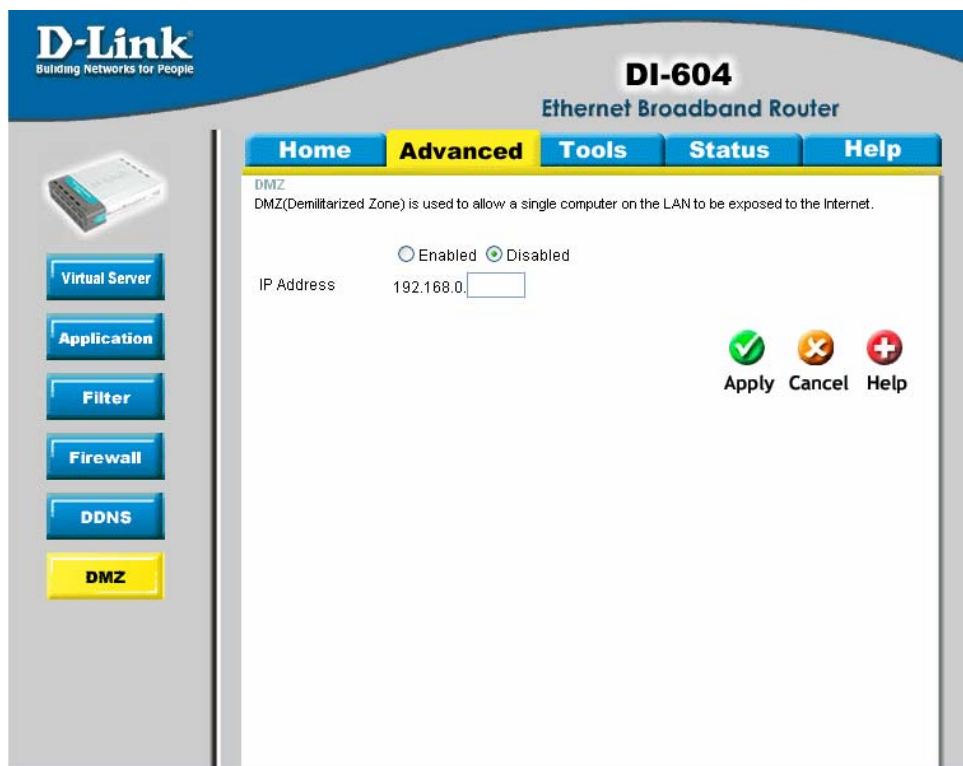
**Provider** :Select from the list of DDNS servers available.

**Host name** :Enter in your DDNS account host name.

**Username/E-mail** :Enter in your DDNS account username.

**Password/Key** :Enter in your DDNS account password

## ADVANCED > DMZ



If you have a client PC that cannot run Internet applications properly from behind the DI-604, 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.

## TOOLS > ADMIN

The screenshot displays the D-Link DI-604 Ethernet Broadband Router's web management interface. The top navigation bar includes 'Home', 'Advanced', 'Tools' (highlighted), 'Status', and 'Help'. A sidebar on the left contains buttons for 'Admin', 'Time', 'System', 'Firmware', and 'Misc'. The main content area is titled 'Administrator Settings' and contains the following sections:

- Administrator Settings:** Administrators can change their login password. This section includes two password fields: 'New Password' and 'Reconfirm Password', both masked with dots.
- User (The Login name is "user"):** This section also includes two password fields: 'New Password' and 'Reconfirm Password', both masked with dots.
- Remote Management:** Let administrator perform administration task from remote host. This section features a radio button selection for 'Enabled' (unselected) and 'Disabled' (selected). Below this are input fields for 'IP Address' (set to 0.0.0.0) and 'Port' (set to 8080).

At the bottom right of the form, there are three buttons: 'Apply' (with a green checkmark icon), 'Cancel' (with a red X icon), and 'Help' (with a red plus icon).

### Admin

At this page, the DI-604 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

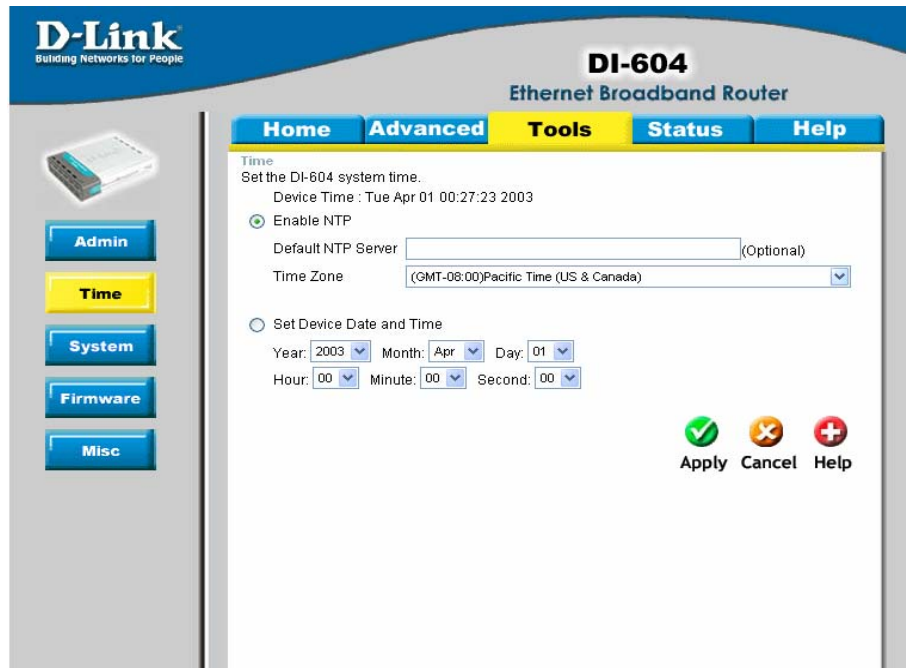
Remote Management allows the DI-604 to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform "Administrator" tasks. This feature enables 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. If the IP address is set to \* (star). This allows any Internet IP address to access 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:** The port number used to access the Broadband Router. (Select from the pull-down menu.)

**Example:** <http://x.x.x.x:8080> where 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

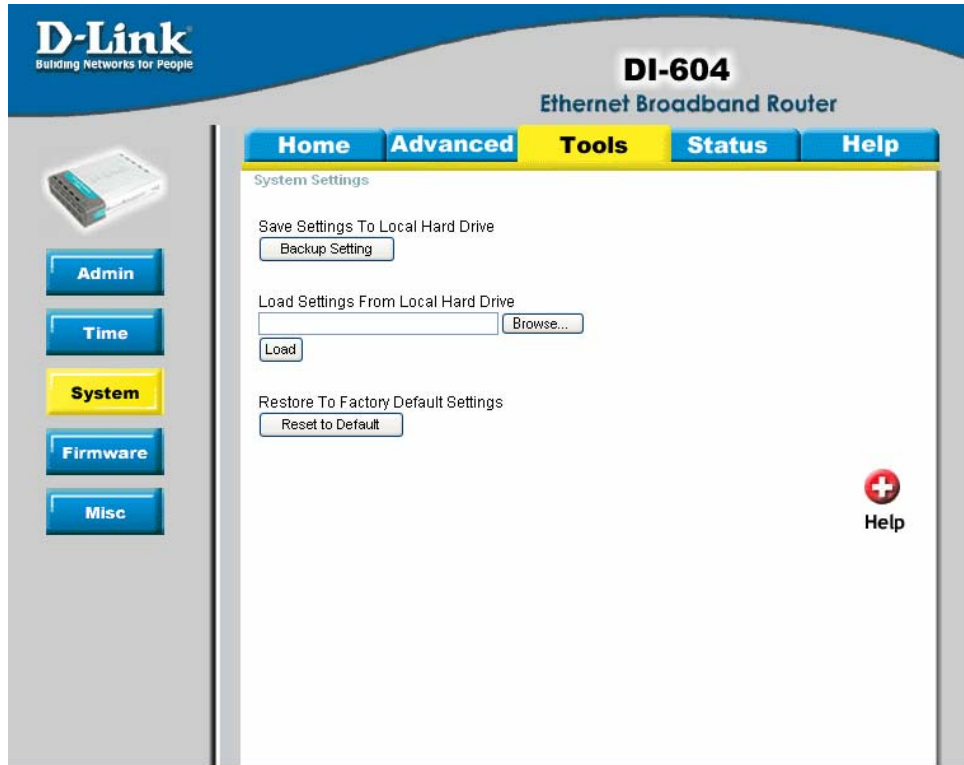


### Time

The system time is the time used by the DI-604 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.

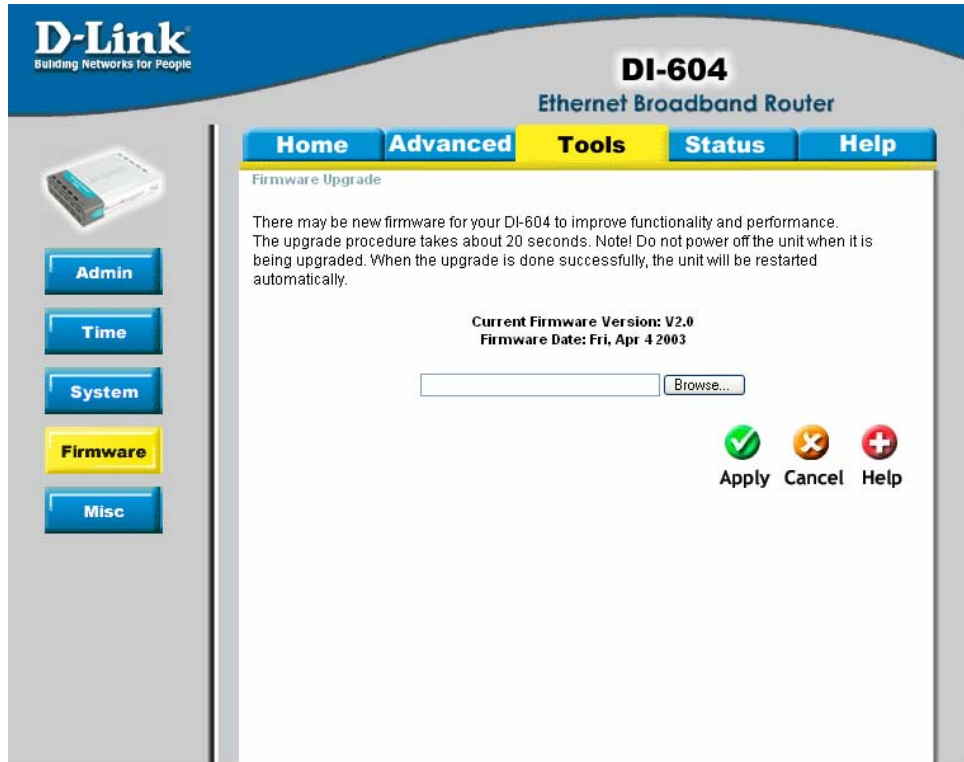
## TOOLS > SYSTEM



### 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.

### 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.

### **Block WAN Ping**

When you “Block WAN Ping”, you are causing the public WAN IP address on the Broadband Router to not respond to ping commands. 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-604 will not reply to ping (ICMP) request packets from the Internet.

### **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.

### **SPI Mode**

When this feature is enabled, the router will record the packet information pass through the router like IP address, port address, ACK, SEQ number and so on. And the router will check every incoming packet to detect if this packet is valid.

### **UPnP**

UPnP is short for Universal Plug and Play which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The DI-604 is a UPnP enabled router and will only work with other UPnP devices/software. If you do not want to use the UPnP functionality, it can be disabled by selecting "Disabled".

### **VPN Pass-Through**

The device 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 device. This is useful when you have many VPN clients on the local area network.

## STATUS > DEVICE INFORMATION

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Ethernet Broadband Router

Home Advanced Tools **Status** Help

Device Information  
Firmware Version: V2.0, Fri, Apr 4 2003

**LAN**

MAC Address 00-50-18-00-0F-01  
IP Address 192.168.0.1  
Subnet Mask 255.255.255.0  
DHCP Server Enabled

**WAN**

MAC Address 00-50-18-00-00-01  
Connection Static IP  
IP Address 0.0.0.0  
Subnet Mask 0.0.0.0  
Gateway 0.0.0.0  
Domain Name Server 0.0.0.0

Device Time: Tue Apr 01 00:30:44 2003

Help

This page 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, there will be a **Release** button and **Renew** button. Use Release to disconnect from your ISP and use Renew to connect to your ISP.

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

**WAN**

MAC Address 00-50-18-00-00-01  
Connection Static IP  
IP Address 0.0.0.0  
Subnet Mask 0.0.0.0  
Gateway 0.0.0.0  
Domain Name Server 0.0.0.0

This page allows you to observe the DI-604'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-604

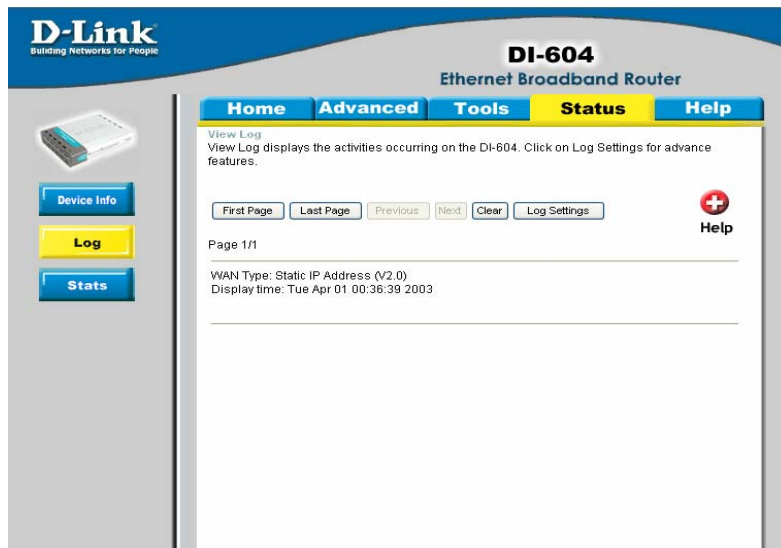
**Subnet Mask:** LAN/Private Subnet Mask of the DI-604

**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

**STATUS > LOG**



## 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 Setting.

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

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

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

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

**Clear** - Clears the logs completely.

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

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Home Advanced Tools **Status** Help

Log Settings  
Logs can be saved by sending it to an admin email address or to a syslog server.

E-mail Alert

SMTP Server / IP Address

Email Address

Syslog

Log Type  System Activity  
 Debug Information  
 Attacks  
 Dropped Packets  
 Notice

Apply Cancel Help

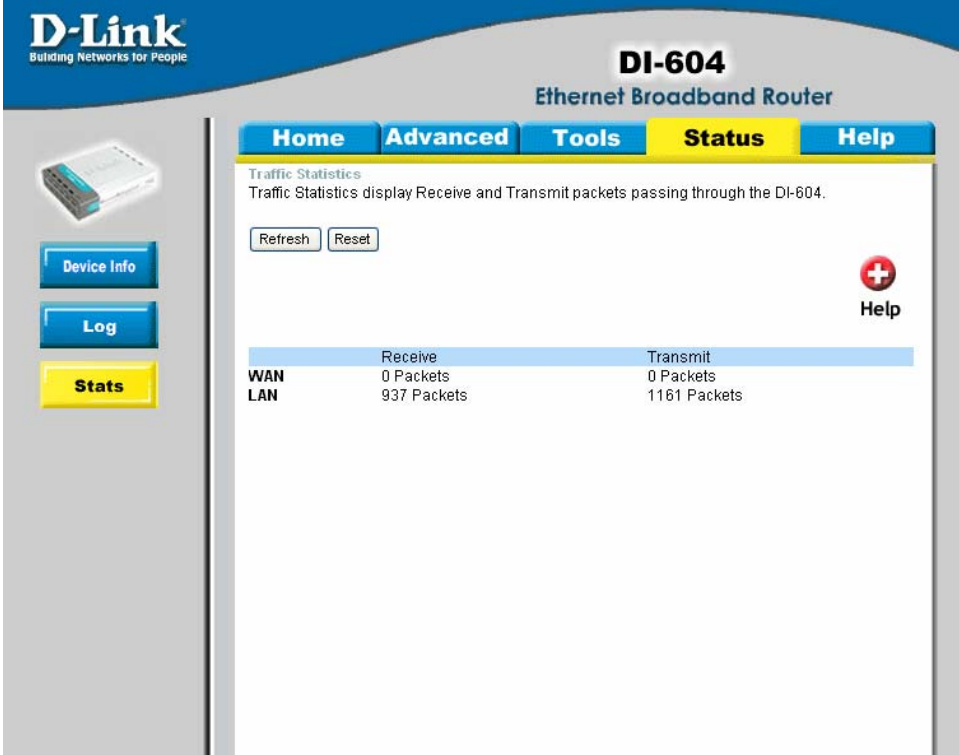
## Log Settings

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

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

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

## STATUS > STATS



The screenshot shows the web interface of a D-Link DI-604 Ethernet Broadband Router. The page title is "DI-604 Ethernet Broadband Router". The navigation menu includes "Home", "Advanced", "Tools", "Status" (highlighted), and "Help". The "Status" section is titled "Traffic Statistics" and contains the text "Traffic Statistics display Receive and Transmit packets passing through the DI-604." Below this text are "Refresh" and "Reset" buttons. A "Help" icon is also present. The main content area displays a table with traffic statistics for WAN and LAN ports, categorized by Receive and Transmit packets.

	Receive	Transmit
WAN	0 Packets	0 Packets
LAN	937 Packets	1161 Packets

## 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.



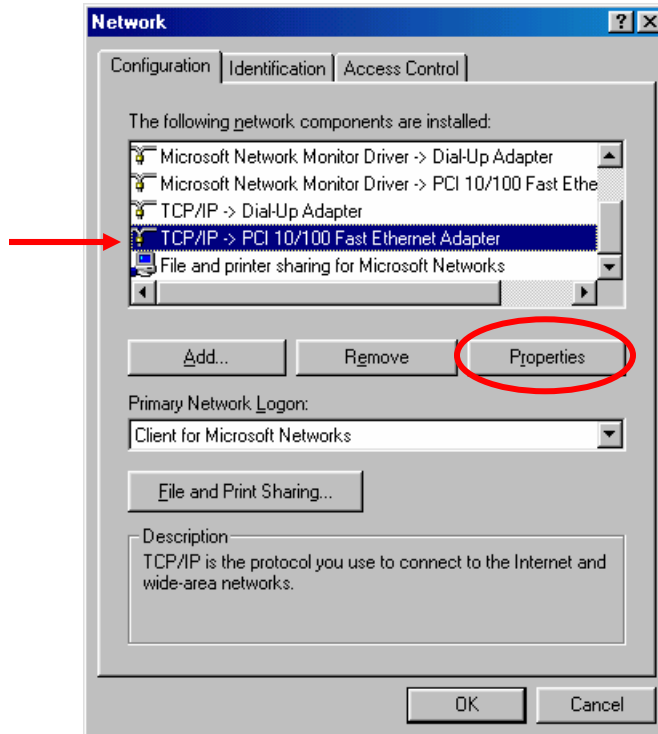
# Troubleshooting

If you **do not** wish to set the static IP address on your PC, you will need to configure your PC to request an IP address from the gateway.

Click the **Start** button, select **Settings**, and select **Control Panel**.

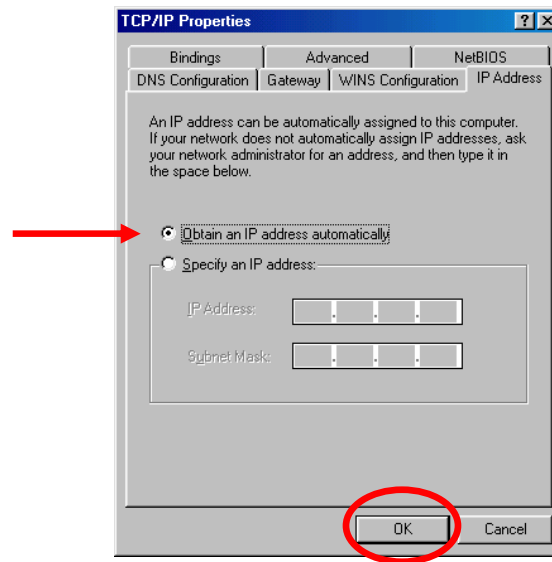
Double-click the **Network** icon.

In the configuration tab, select the **TCP/IP protocol line** that has been associated with your network card/adaptor. If there is no TCP/IP line listed, you will need to install TCP/IP now.



Click the **Properties** button.

Choose the **IP ADDRESS** tab. Select **Obtain an IP automatically**.



After clicking **OK**, windows might ask you to restart the PC. Click **Yes**.

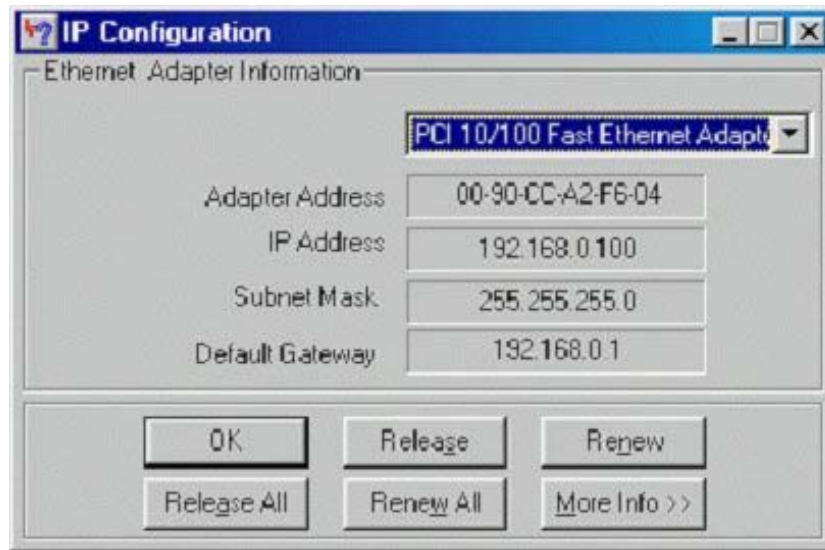
## CONFIRM YOUR PC'S IP CONFIGURATION

There are two tools which are great for finding out a computer's IP configuration: MAC address and default gateway.

### WINIPCFG (for Windows 95/98)

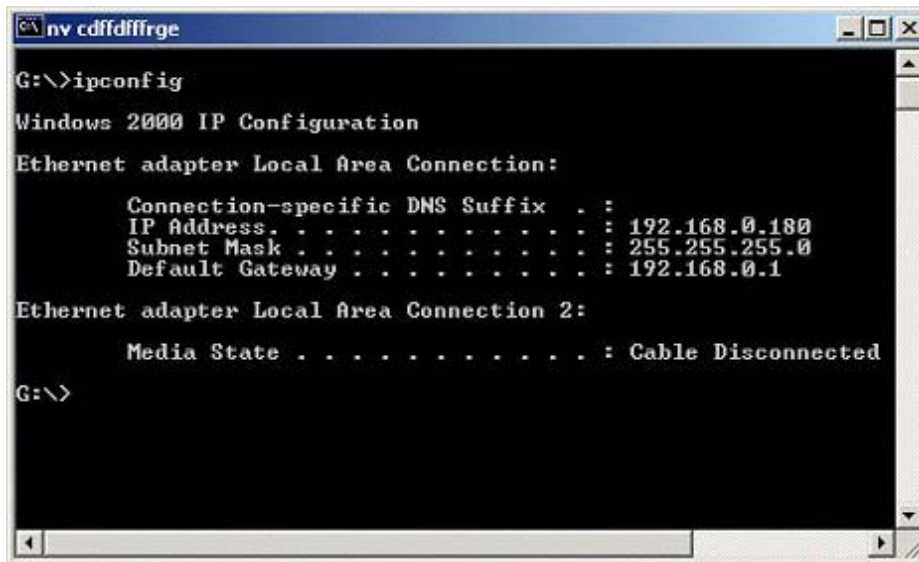
Inside the windows 95/98 Start button, select Run and type winipcfg. In the example below this computer has an IP address of 192.168.0.100 and the default gateway is 192.168.0.1. The default gateway should be the network device IP address. The MAC address in windows 95/98 is called the Adapter Address.

**NOTE:** You can also type **winipcfg** in the DOS command prompt.



### IPCONFIG (for Windows 2000/NT/XP)

At the command prompt type **IPCONFIG** and press **Enter**. Your PC IP information will be displayed as shown below.

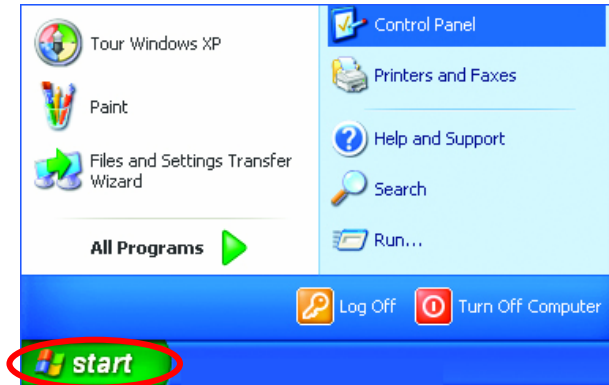


## Assigning a Static IP Address

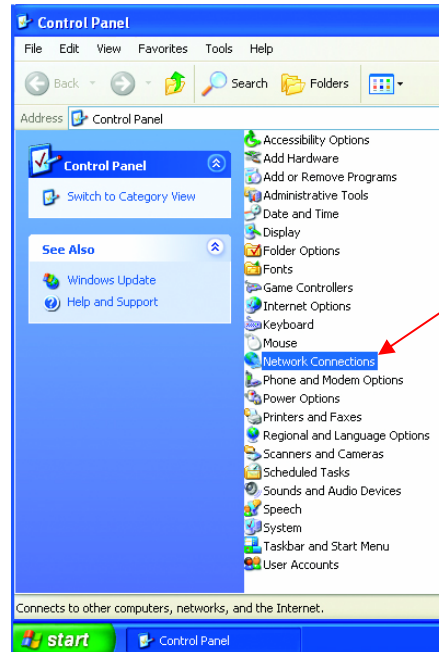
**Note:** Residential Gateways/Broadband Routers will automatically assign IP Addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable Gateway/Router you will not need to assign Static IP Addresses.

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**

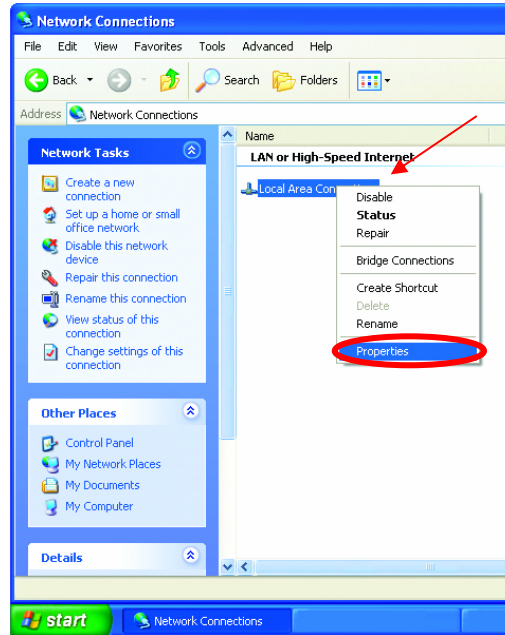


Double-click on  
**Network  
Connections**



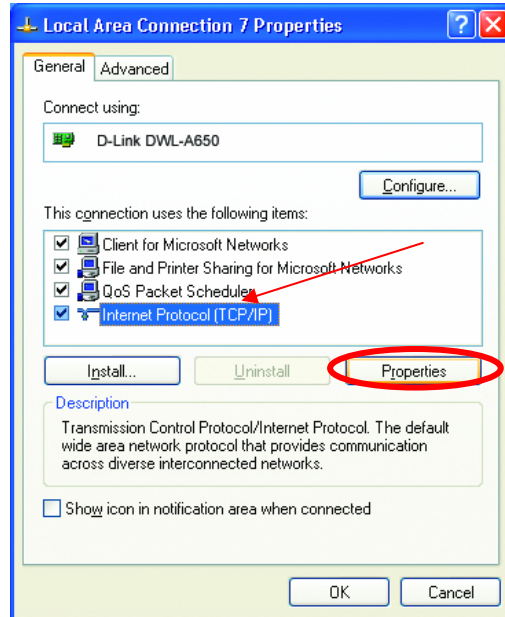
Right-click on **Local Area Connections**.

Double-click **Properties**



Highlight **Internet Protocol (TCP/IP)**

Click **Properties**

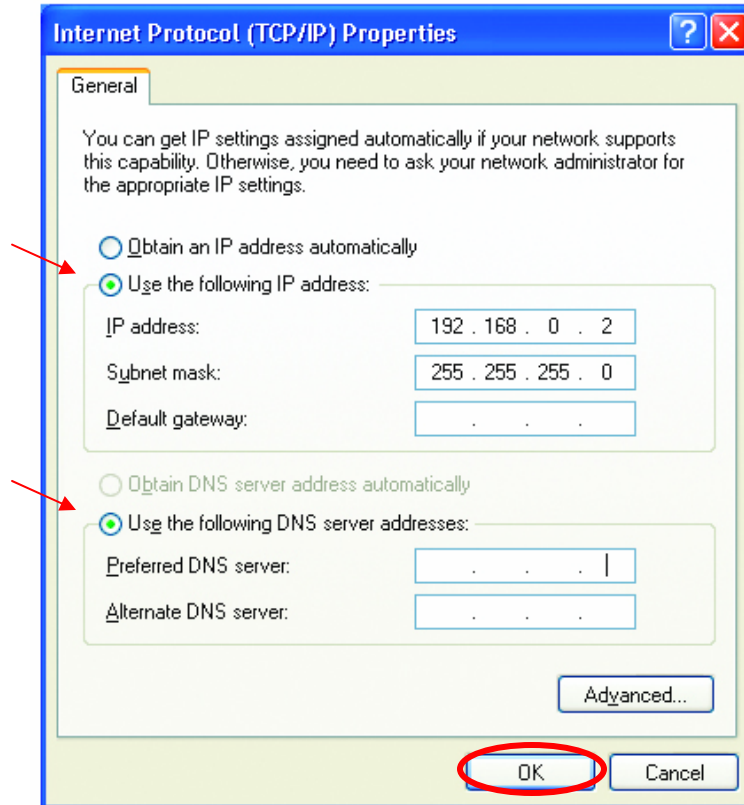


Select **Use the following IP address** in the Internet Protocol (TCP/IP) Properties window.

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.

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.)

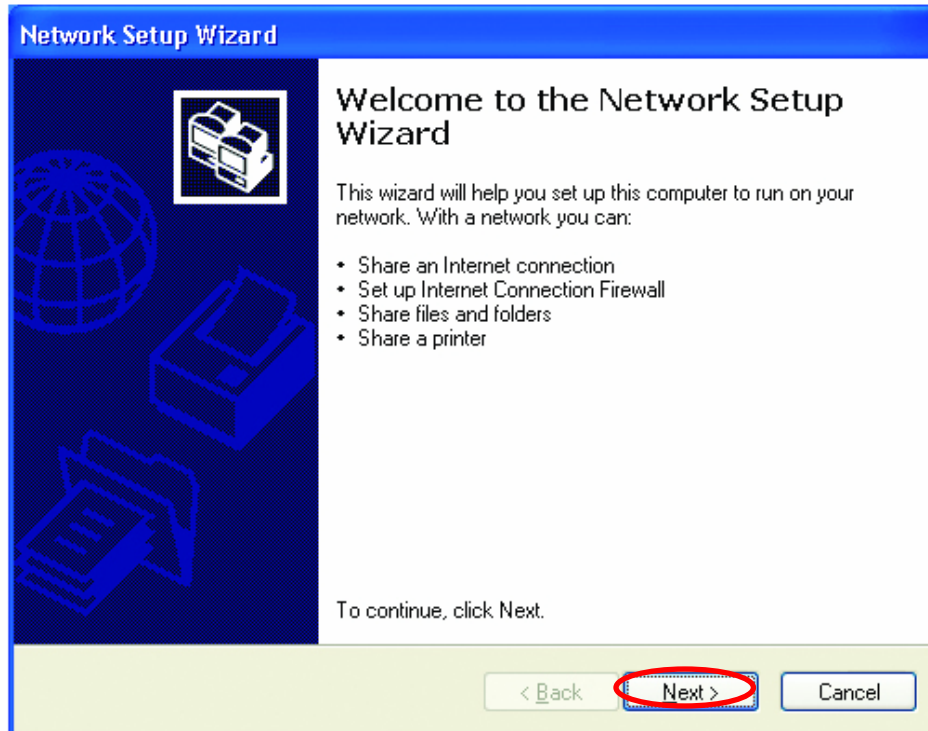
# Networking Basics

## Using the Network Setup Wizard in Windows XP

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

*Note:* Please refer to websites such as <http://www.homenethelp.com> and <http://www.microsoft.com/windows2000> for information about networking computers using Windows 2000, ME or 98.

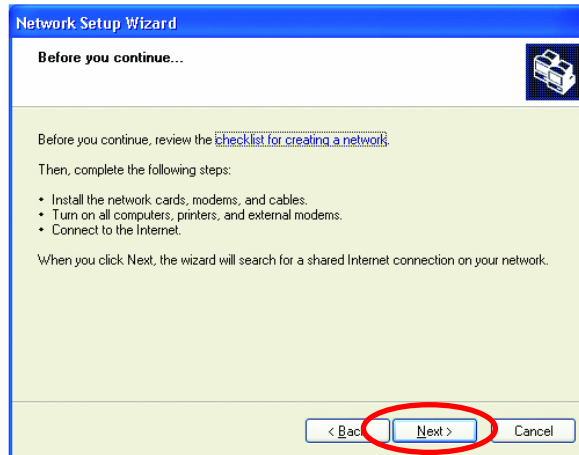
Go to **Start>Control Panel>Network Connections**  
Select **Set up a home or small office network**



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

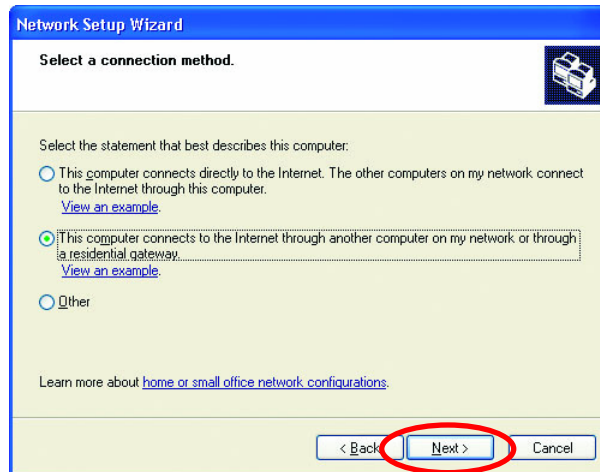
## Networking Basics

Please follow all the instructions in this window:



Click **Next**

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

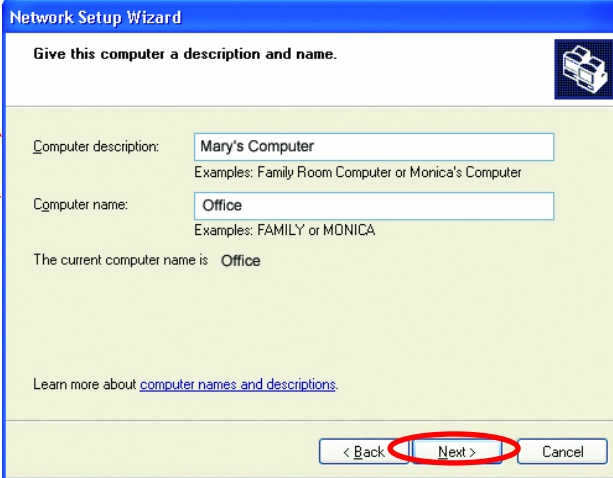


Click **Next**



## Networking Basics

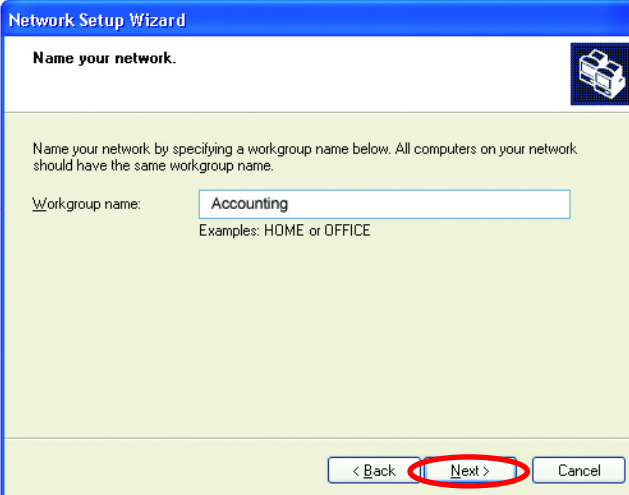
Enter a **Computer description** and a **Computer name** (optional.)



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

Click **Next**

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

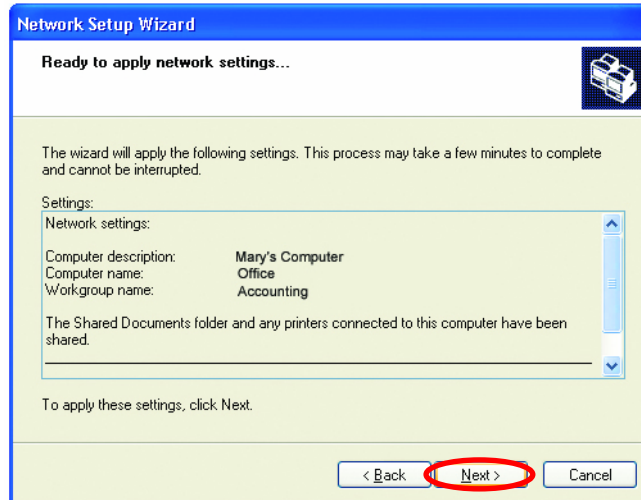


The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' It contains a text input field for 'Workgroup name:' with the value 'Accounting'. Below the field, it says 'Examples: HOME or OFFICE'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The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

Click **Next**

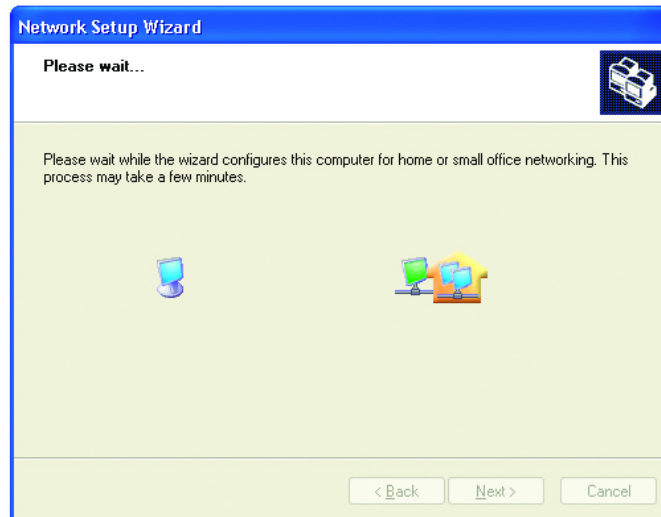
## Networking Basics

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



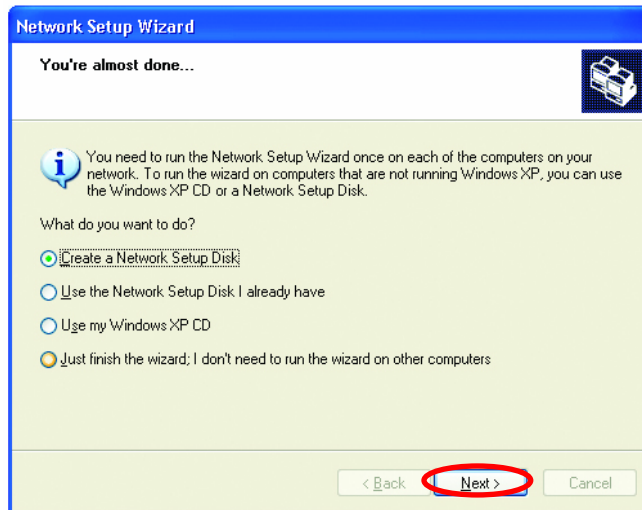
When the changes are complete, click **Next**.

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

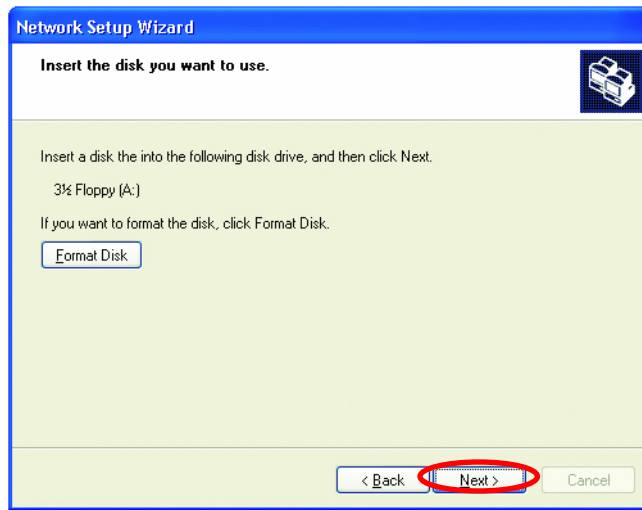


## Networking Basics

In the window below, select the 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**.



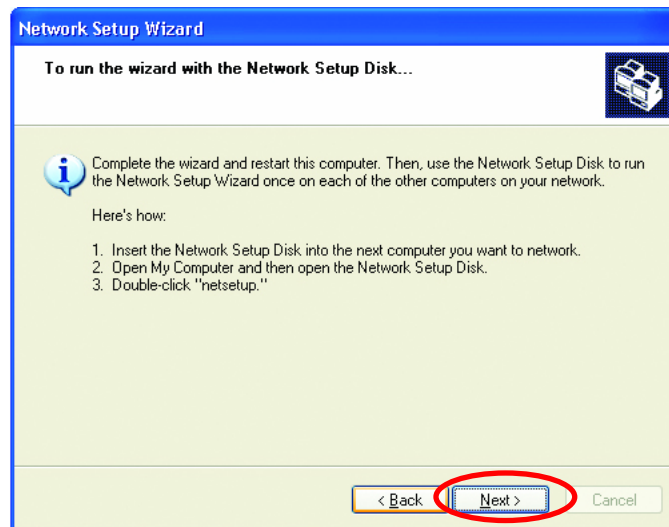
Format the disk if you wish, and click **Next**.

## Networking Basics

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

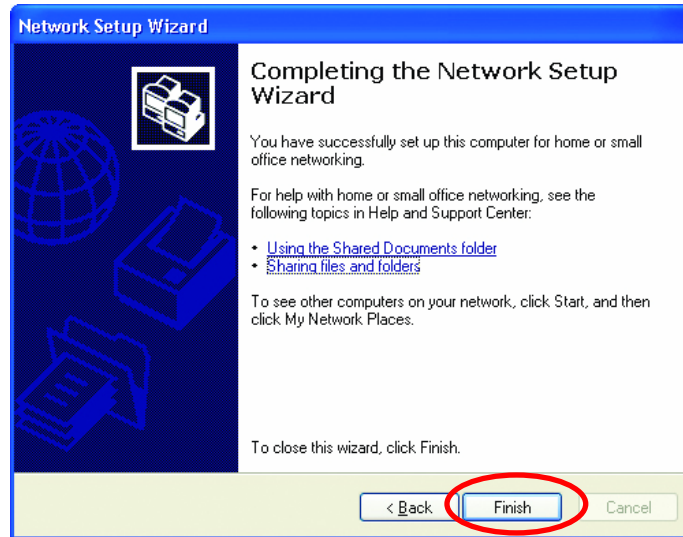


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next**.

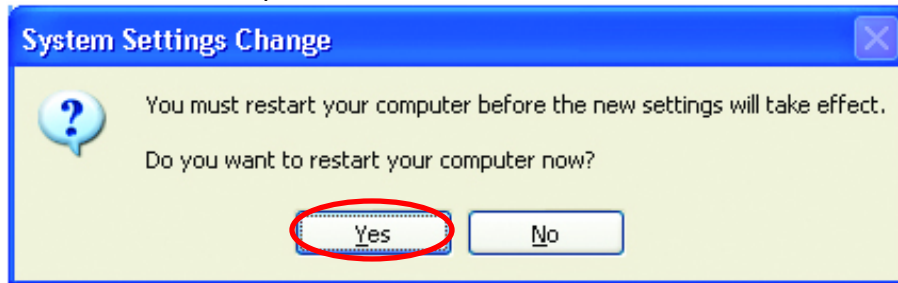


## Networking Basics

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



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



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

## Networking Basics

### Naming your Computer

To name your computer, please follow these directions:

In **Windows XP**:

Click **Start** (in the lower left corner of the screen)

**Right-click on My Computer**

Select **Properties** and click

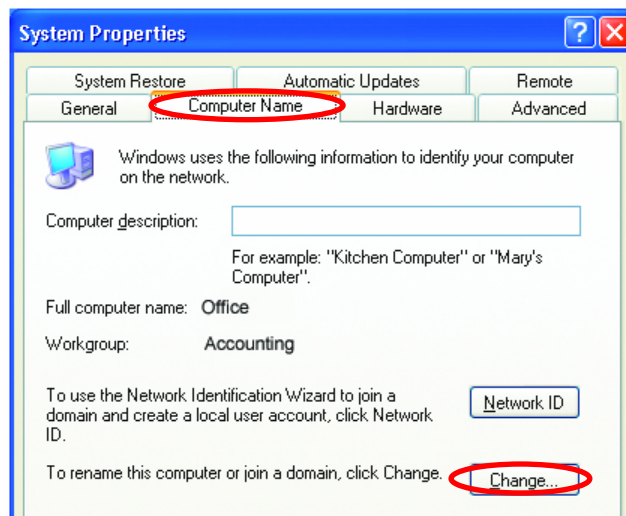


Select the **Computer Name Tab** in the **System Properties** window.

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

To rename the computer and join a domain,

Click **Change**



## Networking Basics

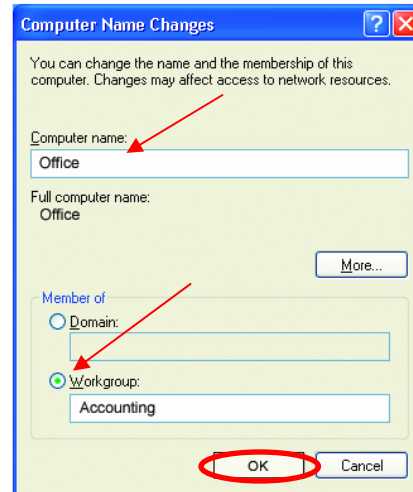
### Naming your Computer

In this window, enter the **Computer name**.

Select **Workgroup** and enter the name of the **Workgroup**.

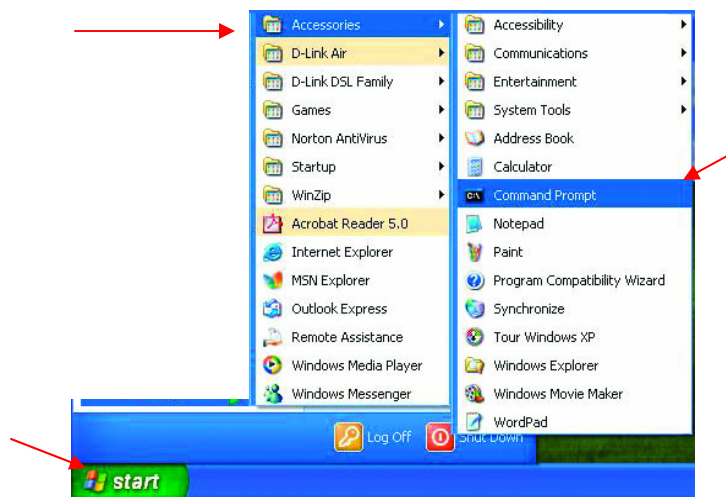
All computers on your network must have the same **Workgroup** name.

Click **OK**



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

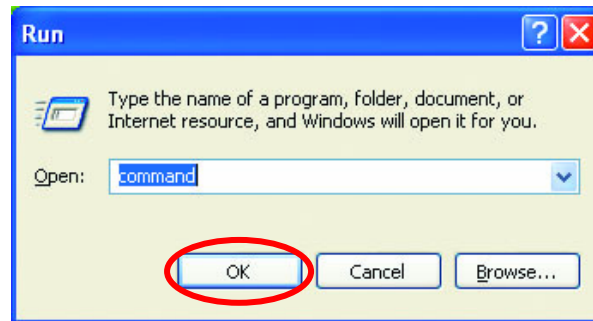
Go to **Start > All Programs > Accessories > Command Prompt**



## Networking Basics

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

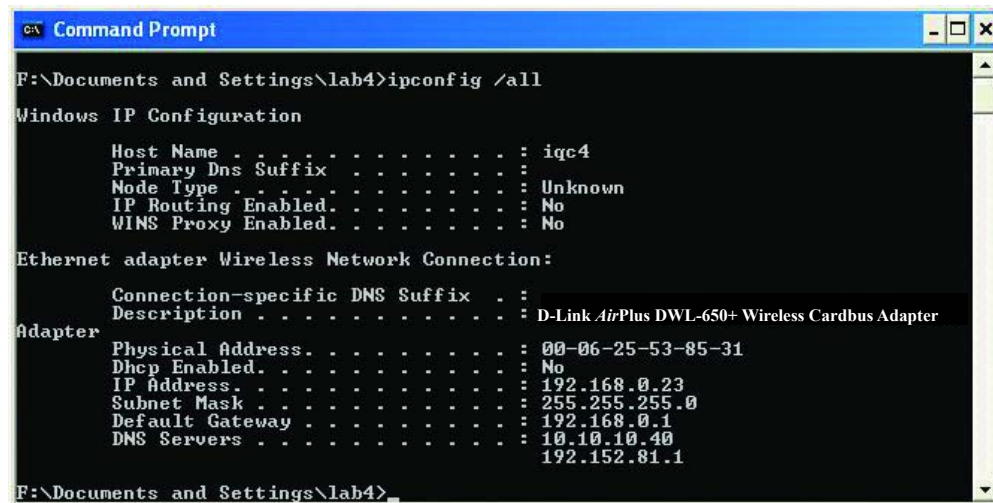
Type Command



Click **OK**

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

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

A screenshot of a Windows Command Prompt window. The title bar reads 'Command Prompt'. The command prompt shows the following text:

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

Windows IP Configuration

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

Ethernet adapter Wireless Network Connection:

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

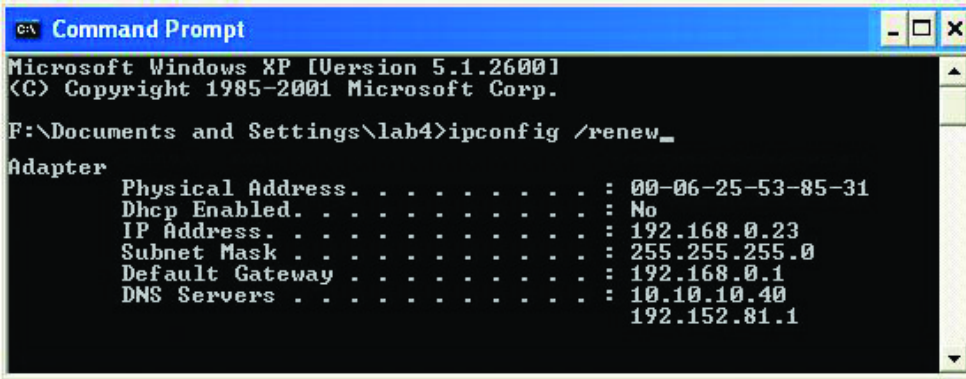
F:\Documents and Settings\lab4>
```



## Networking Basics

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

Type **ipconfig /renew** at the prompt to get a new IP Address. Click **Enter**. The new IP Address is shown below.



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

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

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

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

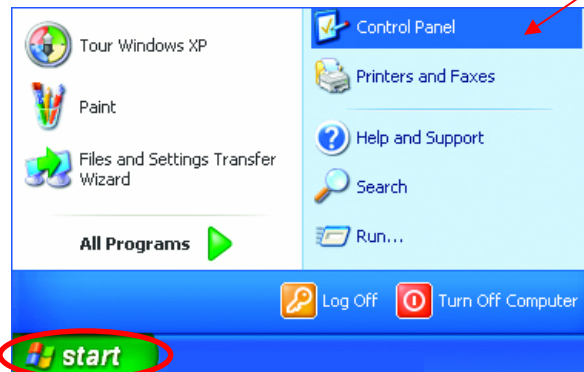
### Assigning a Static IP Address

**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**

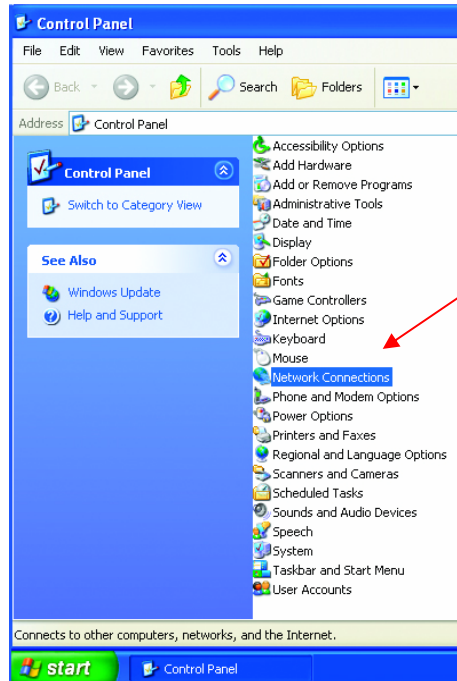
Double-click on **Control Panel**



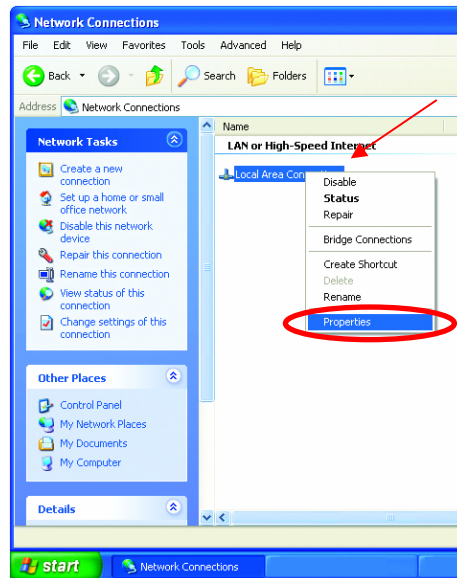
## Networking Basics

### Assigning a Static IP Address

Double-click on  
Network Connections



Right-click on Local  
Area Connections.



Double-click  
Properties

## Networking Basics

### Assigning a Static IP Address

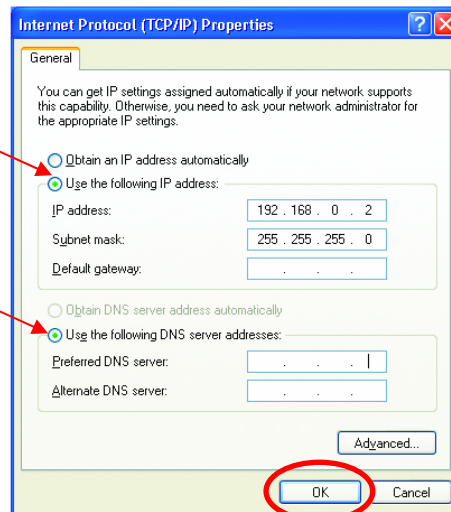
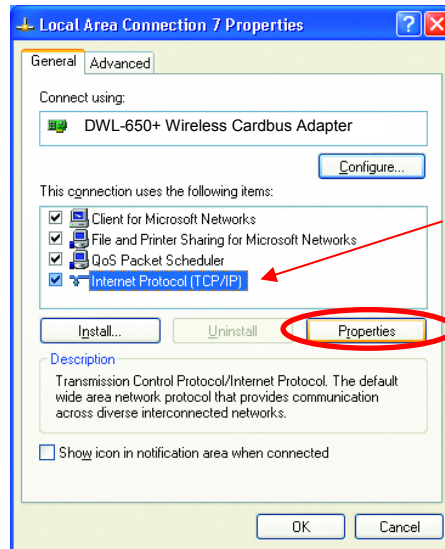
Highlight Internet  
Protocol  
(TCP/IP)

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

Select **Use the  
following IP address**  
in the **Internet  
Protocol (TCP/IP)  
Properties** window  
(shown below.)

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.)*

## Networking Basics

### ***Adding and Sharing Printers in Windows XP***

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

Whether you want to add a **local printer** (a printer connected directly to one computer,) share an **LPR printer** (a printer connected to a print server) or share a **network printer** (a printer connected to your network through a Gateway/Router,) use the **Add Printer Wizard**, you can find 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 a network printer
3. Sharing an LPR printer

#### ***Adding a local printer***

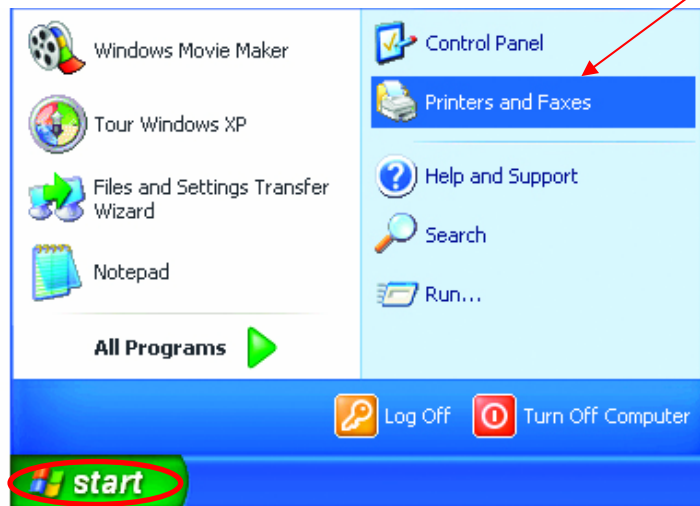
*(A printer connected directly to a computer)*

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.

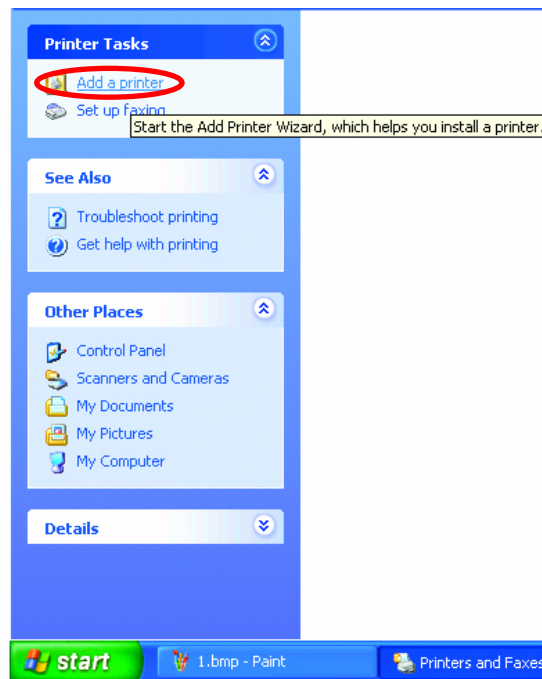
## Networking Basics

### Adding a local printer

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



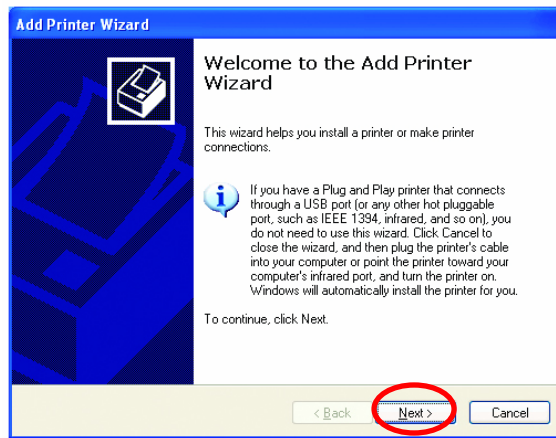
Click on **Add a printer**



## Networking Basics

### Adding a local printer

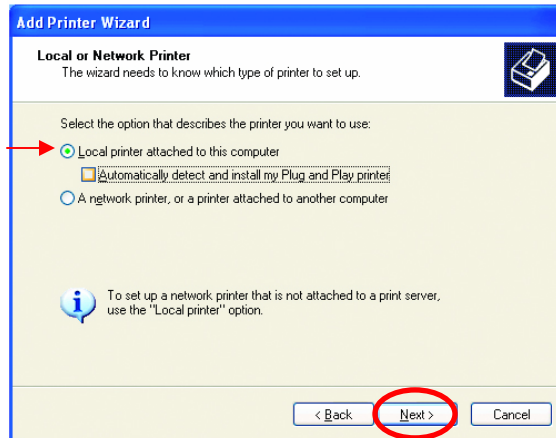
Click **Next**



Select **Local printer attached to this computer**

*(Deselect **Automatically detect and install my Plug and Play printer** if it has been selected.)*

Click **Next**

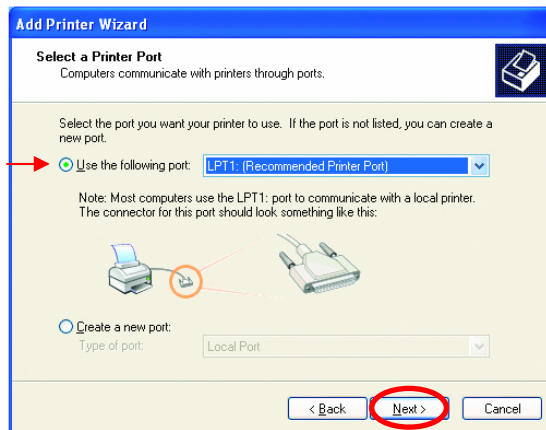


Select **Use the following port:**

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**



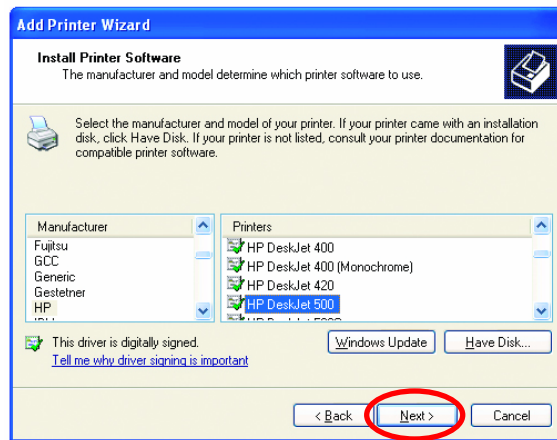
## Networking Basics

### Adding a local printer

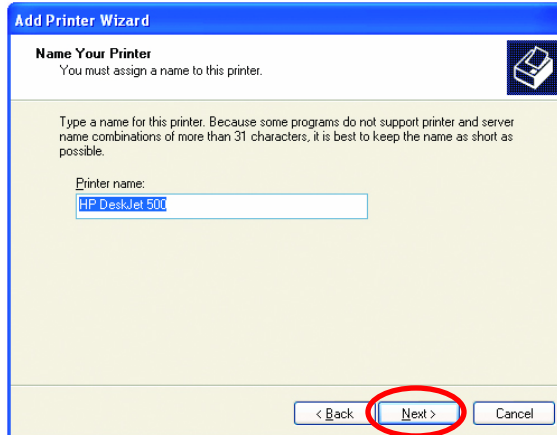
Select and highlight the **correct driver** for your printer.

Click **Next**

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

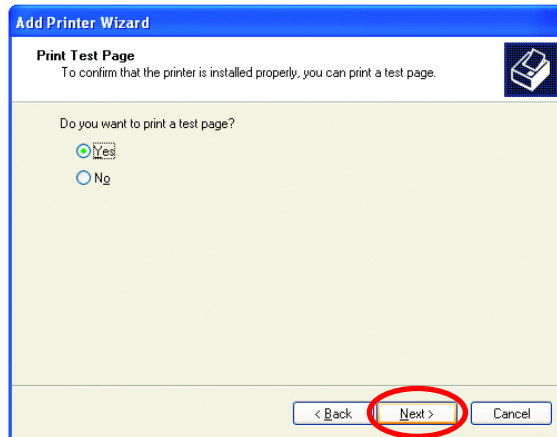


At this screen, you can change the name of the printer (optional.)



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

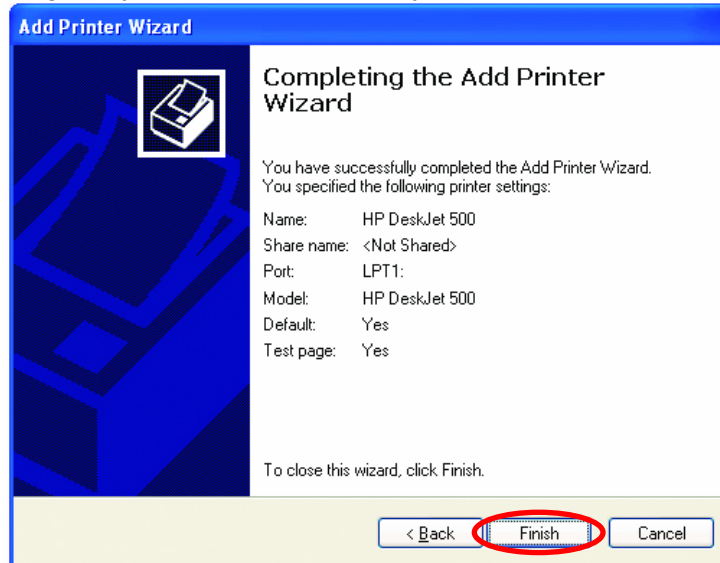
Click **Next**



## Networking Basics

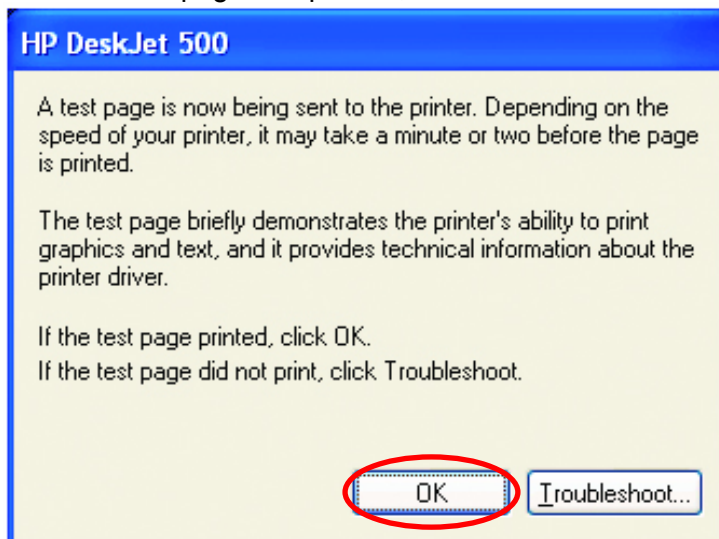
### Adding a local printer

This screen gives you information about your printer.



Click **Finish**

When the test page has printed,



Click **OK**



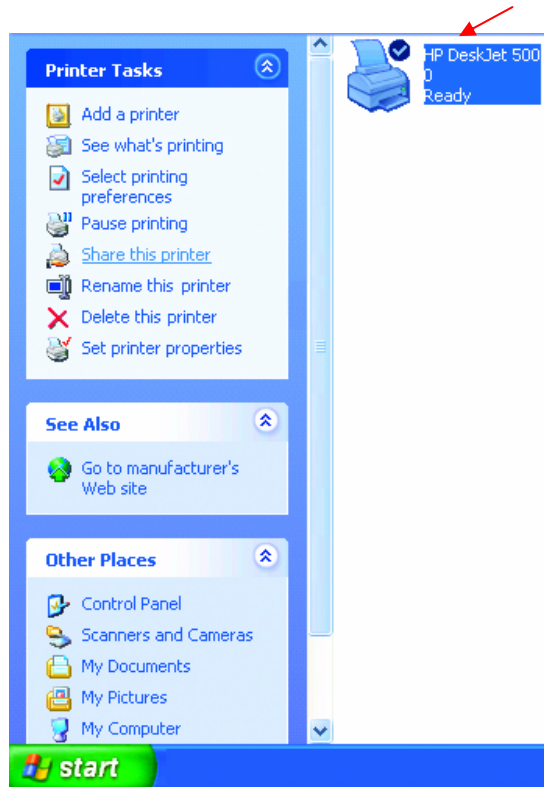
## Networking Basics

### Adding a local printer

Go to **Start > Printers and Faxes**

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

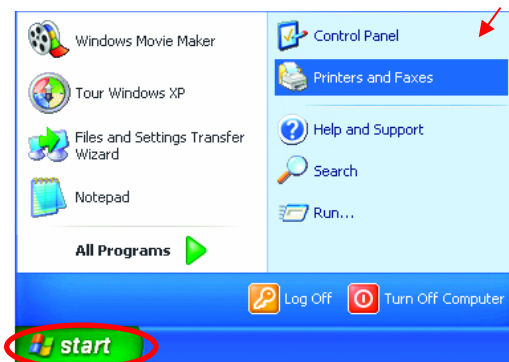
You have successfully added a local printer.



### 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:

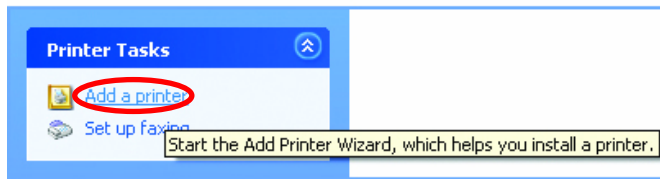
Go to **Start > Printer and Faxes**



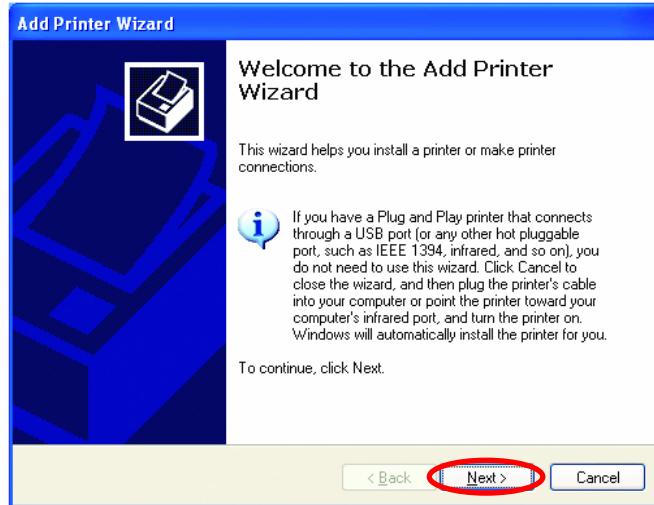
## Networking Basics

### Sharing a network printer

Click on  
**Add a Printer**

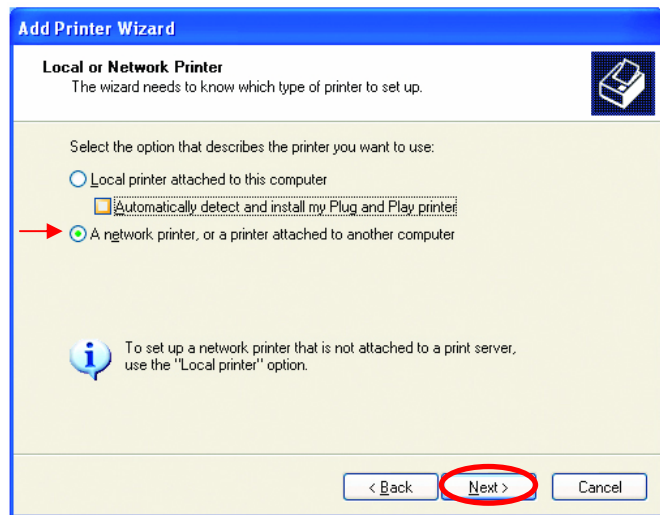


Click **Next**



Select **Network Printer**

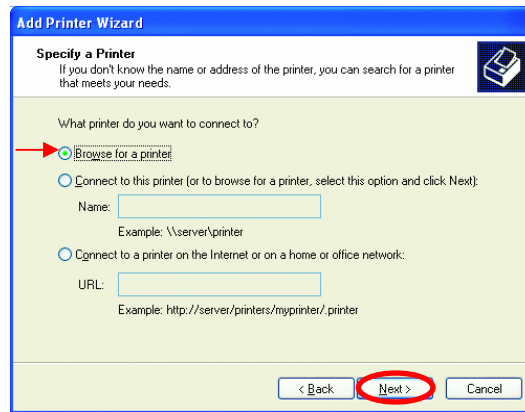
Click **Next**



## Networking Basics

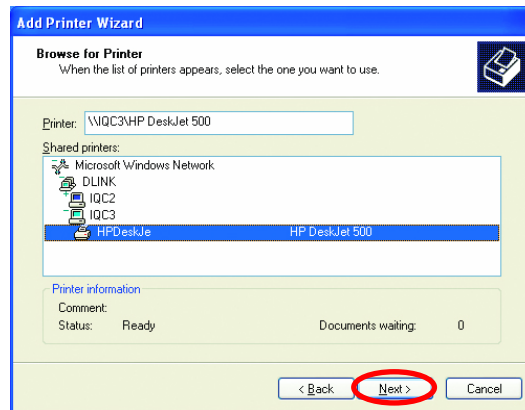
### Sharing a network printer

Select **Browse for a printer**



Click **Next**

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



Click **Next**

Click **Finish**

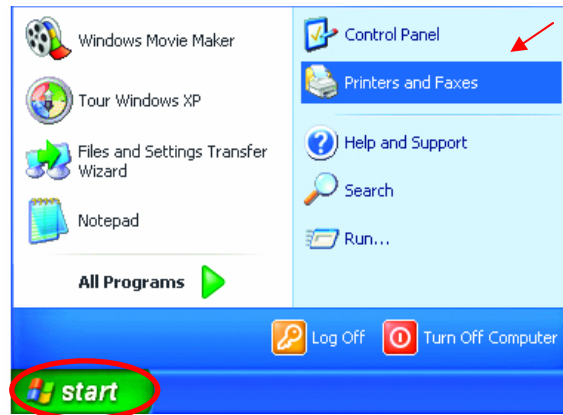


## Networking Basics

### 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.**

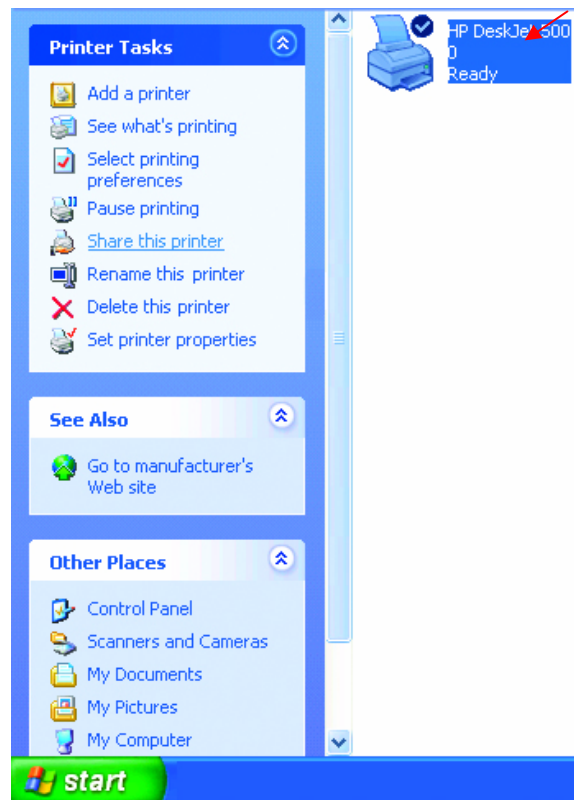
*To share this printer on your network:*

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

### Sharing an LPR printer

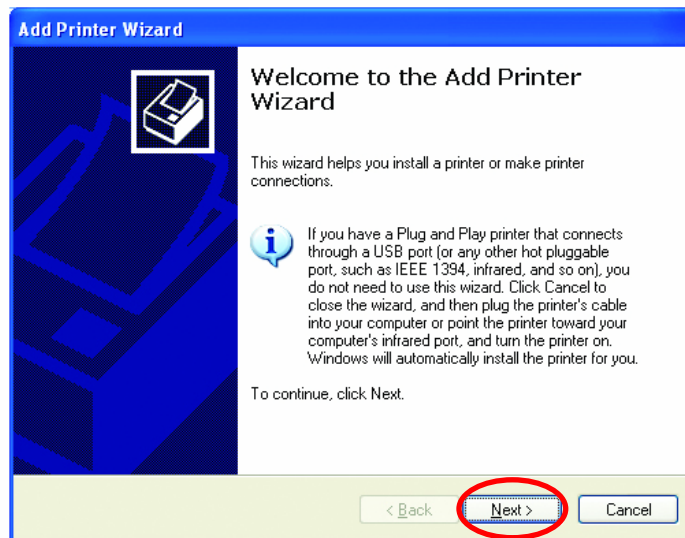
To share an **LPR printer** (using a print server,) you will need a Print Server such as the **DP-101P+**. Please make sure that you have run the **Network Setup Wizard** on all the computers on your network. To share an **LPR printer**, please follow these directions:

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

Click on  
**Add a Printer**

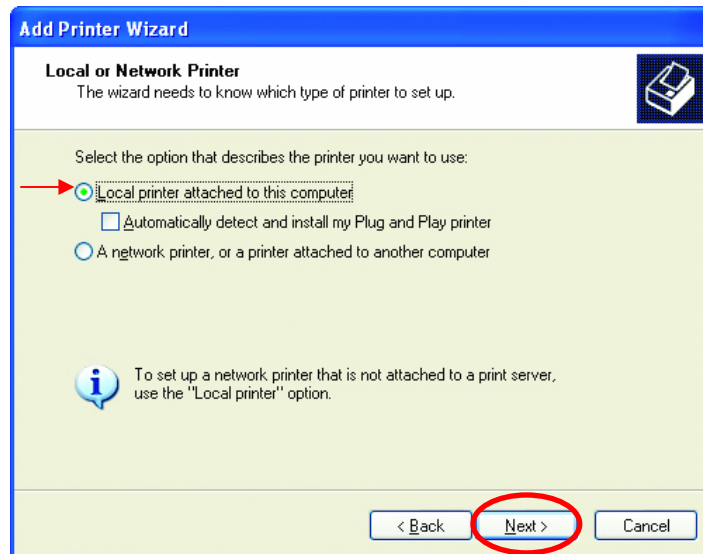
The screen to the  
right will display.

Click **Next**



Select  
**Local printer...**

Click **Next**



## Networking Basics

### Sharing an LPR printer

Select **Create a new port**

From the pull-down menu, select **Standard TCP/IP Port**, as shown.

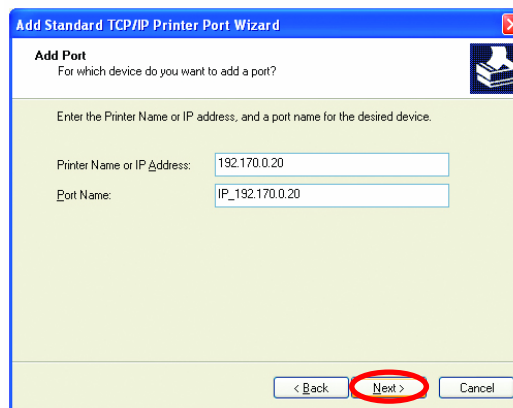
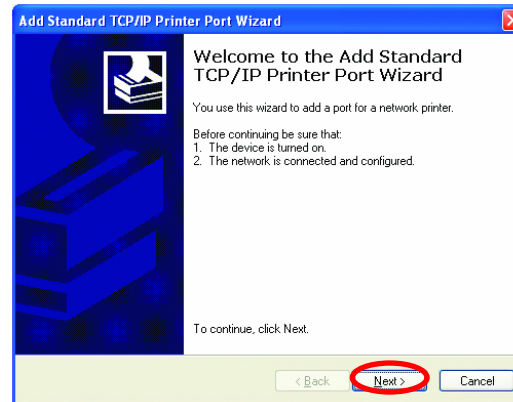
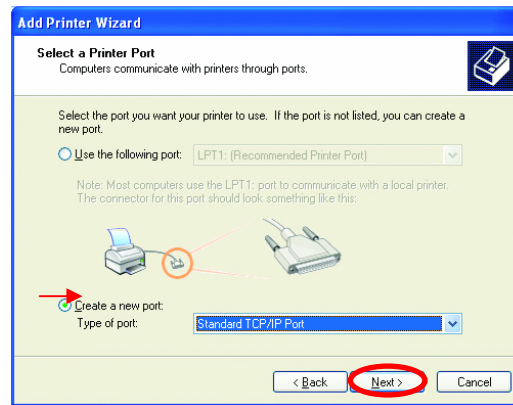
Click **Next**

Please read the instructions on this screen.

Click **Next**

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

Click **Next**



## Networking Basics

### Sharing an LPR printer

In this screen, select **Custom**.

Click **Settings**

**Add Standard TCP/IP Printer Port Wizard**

**Additional Port Information Required**  
The device could not be identified.

The detected device is of unknown type. Be sure that:  
1. The device is properly configured.  
2. The address on the previous page is correct.

Either correct the address and perform another search on the network by returning to the previous wizard page or select the device type if you are sure the address is correct.

Device Type

Standard Generic Network Card

Custom **Settings...**

< Back Next > Cancel

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**

**Configure Standard TCP/IP Port Monitor**

Port Settings

Port Name: IP\_192.170.0.20

Printer Name or IP Address: 192.170.0.20

Protocol

Raw  LPR

Raw Settings

Port Number: 9100

LPR Settings

Queue Name: lp

LPR Byte Counting Enabled

SNMP Status Enabled

Community Name: public

SNMP Device Index: 1

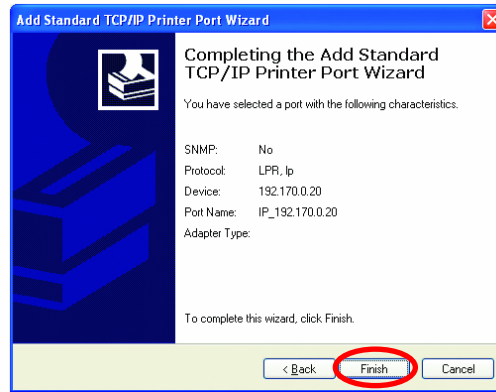
**OK** Cancel

## Networking Basics

### Sharing an LPR printer

This screen will show you information about your printer.

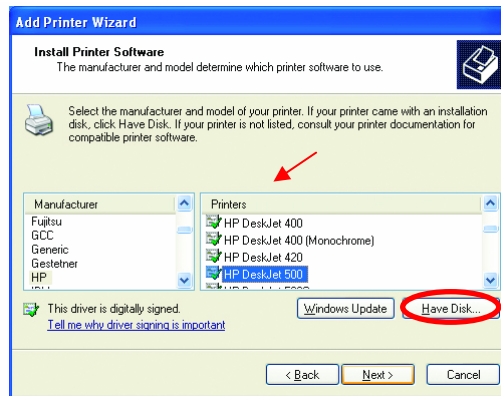
Click **Finish**



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

Insert the printer driver disk that came with your printer.

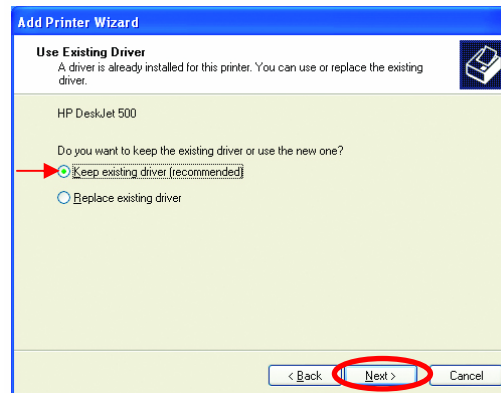
Click **Have Disk**



If the printer driver is already installed,

Select **Keep existing driver**

Click **Next**





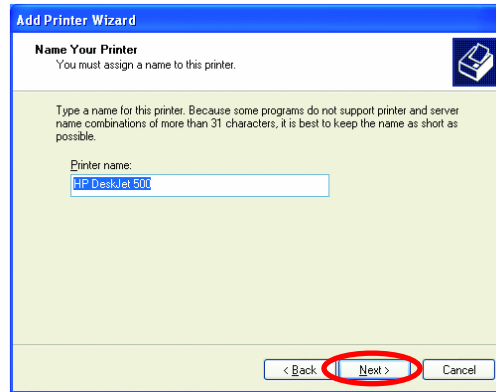
## Networking Basics

### Sharing an LPR printer

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

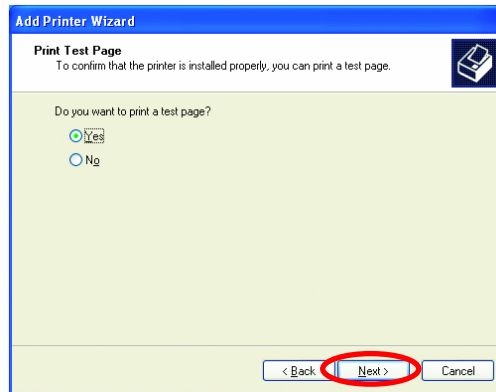
*Please remember the name of your printer. You will need this information when you use the **Add Printer Wizard** on the other computers on your network.*

Click **Next**



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

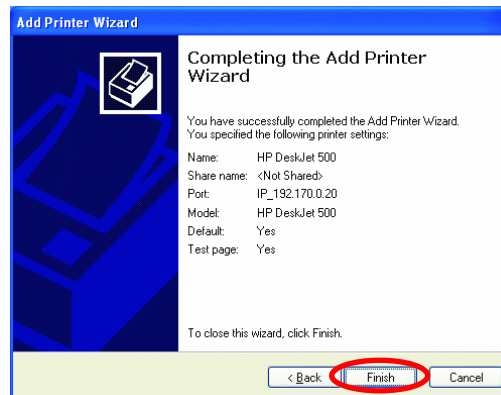
Click **Next**



*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**.*

## ***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.

## **Technical Specifications**

### **Standards**

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-TX Fast Ethernet
- IEEE 802.3 Nway Auto-Negotiation

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

- PPTP
- L2TP
- IPSec

### **Device Management**

Web-Based – requires at least Microsoft Internet Explorer v5 or later, Netscape Navigator v4 or later, or other Java-enabled browsers.

### **Media Access Control**

CMSA/CA with ACK

### **LEDS**

- Power
- WAN
- Local Network – 10/100

### **Operating Temperature**

32°F to 131°F (0°C to 55°C)

### **Humidity**

95% maximum (non-condensing)

**Power Input**

External power Supply

DC 5V, 2.0A

**Safety & Emissions**

FCC

UL

**Dimensions**

L = 5.6in (142mm)

W = 4.3in (109mm)

H = 1.2in (31mm)

**Weight**

0.44 lbs (200g)

**Warranty**

One Year

## **Contacting Technical Support**

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

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

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

D-Link Technical Support 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>

When contacting technical support, please provide the following information:

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

## Warranty and Registration

D-Link Systems, Inc. ("D-Link") provides this 1-Year warranty for its product only to the person or entity who originally purchased the product from:

D-Link or its authorized reseller or distributor.

Products purchased and delivered within the fifty United States, the District of Columbia, US Possessions or Protectorates, US Military Installations, addresses with an APO or FPO.

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

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

Hardware (excluding power supplies and fans)

Spare parts and spare kits Ninety (90) days.

D-Link's sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. 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 of an identical make, model or part; D-Link may in its 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. The Warranty Period shall extend for an additional ninety (90) days after any repaired or replaced Hardware is delivered. 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 delivery of the Software for a period of ninety (90) days ("Warranty Period"), if 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. 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. The Warranty Period shall extend for an additional ninety (90) days after any replacement Software is delivered. 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.

***What You Must Do For Warranty Service:***

Registration is conducted via a link on our Web Site (<http://support.dlink.com/register>) Each product purchased must be individually registered for warranty service within ninety (90) days after it is purchased and/or licensed.

FAILURE TO PROPERLY TO REGISTER MAY AFFECT THE WARRANTY FOR THIS PRODUCT.

***Submitting A Claim.*** Any claim under this limited warranty must be submitted in writing before the end of the Warranty Period to an Authorized D-Link Service Office.

The customer must submit 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.

The customer is responsible for all shipping charges to and from D-Link (No CODs allowed). Products sent COD will become the property of D-Link Systems, Inc. Products should be fully insured by the customer and shipped to **D-Link Systems Inc., 53 Discovery Drive, Irvine CA 92618.**

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 that 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; and Any hardware, software, firmware or other products or services provided by anyone other than D-Link.

**Disclaimer of Other Warranties:** EXCEPT FOR THE 1-YEAR LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND 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, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, 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.

**GOVERNING LAW:** This 1-Year 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.

#### **Trademarks**

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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.

**Registration:** Register your D-Link *DI-604* online at <http://support.dlink.com/register/>