

USER MANUAL

EBR-2310

VERSION 1.1



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Package Contents

- EBR-2310 Ethernet Broadband Router
- Power Adapter
- Ethernet Cable
- Manual on CD



System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0 and above (for configuration)

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.

Introduction

The D-Link Express EtherNetwork EBR-2310 is a 4-port Ethernet Broadband Router. The D-Link EBR-2310 enables users to quickly and easily share a high speed Internet connection. The D-Link EBR-2310 also incorporates many advanced features, traditionally found in more expensive routers.

The EBR-2310 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 EBR-2310 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

- **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 EBR-2310 can access corporate networks through various VPN clients more securely.

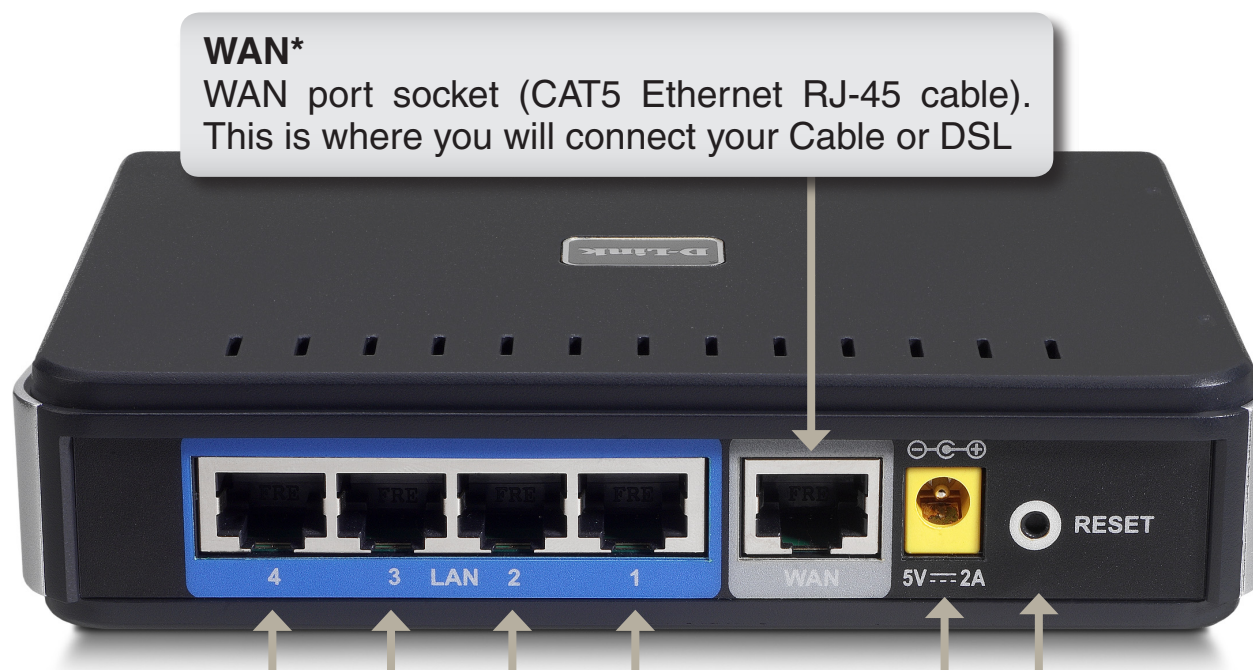
- **Advanced Firewall & Parental Control Features** - The Web-based user interface displays a number of advanced network management features including:
- **Content Filtering** - Easily applied content filtering based on Mac Address, URL and/or Domain Name.
- **Network Address Translation** - NAT allows 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 EBR-2310.
- **Web-Based Management** - EBR-2310 is configurable through any network computer's web browser using Netscape or Internet Explorer.
- **Port Forwarding 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 EBR-2310 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.

Hardware Overview

Front Panel



Rear Panel



WAN*

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

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.)

Power

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

Reset

Used to restore the EBR-2310 back to factory default settings.

***All ports (both LAN & WAN) are Auto-MDIX. All ports auto-sense cable types to accommodate Straight-through or Cross-over cable.**

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.

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 EBR-2310 will then automatically reboot itself.

Installation

Getting Started

Installation Location

The EBR-2310 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 EBR-2310 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 EBR-2310 are:

Temperature 32o F ~ 131o 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 EBR-2310 correctly, you have to properly configure the network settings of your computers. The default IP address of the EBR-2310 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 EBR-2310** 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 EBR-2310

Since the IP address of the EBR-2310 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 EBR-2310).

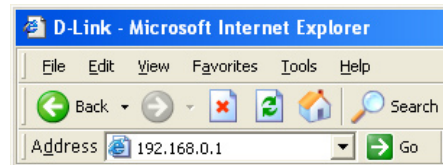
Configuration

The EBR-2310 provides an embedded Web-based management utility making it operating system independent. You can configure your EBR-2310 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 with Java Script enabled.

Log in

Open your web browser and type in the IP address of the EBR-2310 into the *Location* (for Netscape) or *Address* (for IE) field and press “Enter.” The default IP address of the EBR-2310 is **192.168.0.1**

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



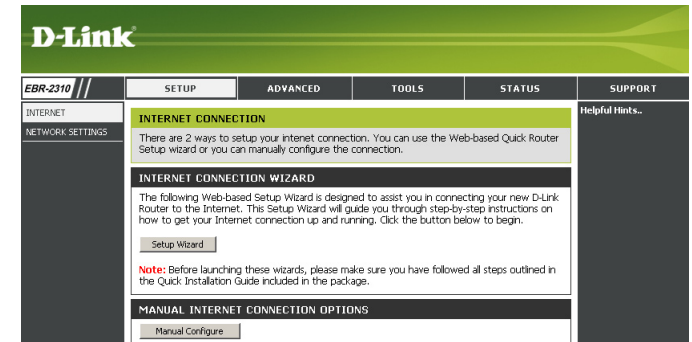
After the connection is established, the logon screen will pop up.

To log in as an administrator, enter the username of “**admin**” and the password (there isn’t a default password, leave it blank). Click the **OK** button. If the password is correct, the web-management interface will appear.

Setup Wizard

You may run the setup wizard to quickly setup your router.

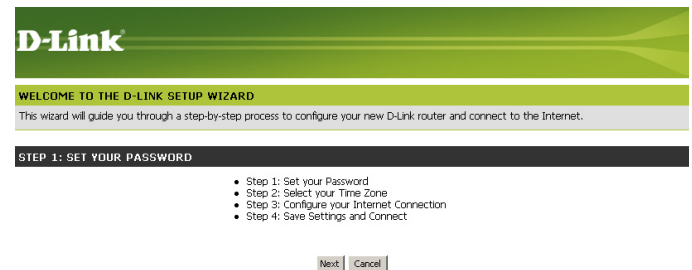
Click **Setup Wizard** to launch the wizard.



Click **Launch Internet Connection Setup Wizard** to begin.



Click **Next** to continue.



Create a new password and then click **Next** to continue.

Select your time zone from the drop-down menu and then click **Next** to continue.

Select the type of Internet connection you use and then click **Next** to continue.

The screenshot shows the 'STEP 1: SET YOUR PASSWORD' screen of the D-Link Setup Wizard. It features a green header with the D-Link logo, a yellow 'WELCOME TO THE D-LINK SETUP WIZARD' banner, and a grey bar with the step title. The main text explains that a password must be set for administrator access. There are two input fields: 'Password :' and 'Verify Password :'. Below these fields are three buttons: 'Prev', 'Next', and 'Cancel'.

The screenshot shows the 'STEP 2: SELECT YOUR TIME ZONE' screen of the D-Link Setup Wizard. It features a green header with the D-Link logo, a yellow 'WELCOME TO THE D-LINK SETUP WIZARD' banner, and a grey bar with the step title. The main text explains that time zone information is required for the router. A drop-down menu is shown with '(GMT-12:00) Eniwetok, Kwajalein' selected. Below the menu are three buttons: 'Prev', 'Next', and 'Cancel'.

The screenshot shows the 'STEP 3: CONFIGURE YOUR INTERNET CONNECTION' screen of the D-Link Setup Wizard. It features a green header with the D-Link logo, a yellow 'WELCOME TO THE D-LINK SETUP WIZARD' banner, and a grey bar with the step title. The main text explains that the Internet connection could not be detected and provides instructions to select an option from a list. A drop-down menu is shown with 'Not Listed or Don't Know' selected. Below this, there are five radio button options for different connection types: DHCP Connection (Dynamic IP Address), Username / Password Connection (PPPoE), Username / Password Connection (PPTP), Username / Password Connection (L2TP), and Static IP Address Connection. Each option has a brief description. At the bottom, there are three buttons: 'Prev', 'Next', and 'Cancel'.

If you selected Dynamic, you may need to enter the MAC address of the computer that was last connected directly to your modem. If you are currently using that computer, click **Clone Your PC's MAC Address** and then click **Next** to continue.

The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

If you selected PPPoE, enter your PPPoE username and password. Click **Next** to continue.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

Note: Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

If you selected PPTP, enter your PPTP username and password. Click **Next** to continue.

D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

DHCP CONNECTION (DYNAMIC IP ADDRESS)

To set up this connection, please make sure that you are connected to the D-Link Router with the PC that was originally connected to your broadband connection. If you are, then click the Clone MAC button to copy your computer's MAC Address to the D-Link Router.

MAC Address : (optional)

Host Name :

Note: You may also need to provide a Host Name. If you do not have or know this information, please contact your ISP.

D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

SET USERNAME AND PASSWORD CONNECTION (PPPoE)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. If you do not have this information, please contact your ISP.

Address Mode : ☒ Dynamic IP ☐ Static IP

IP Address :

User Name :

Password :

Verify Password :

Service Name : (optional)

Note: You may also need to provide a Service Name. If you do not have or know this information, please contact your ISP.

D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

SET USERNAME AND PASSWORD CONNECTION (PPTP)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need PPTP IP address. If you do not have this information, please contact your ISP.

Address Mode : ☐ Dynamic IP ☒ Static IP

PPTP IP Address :

PPTP Subnet Mask :

PPTP Gateway IP Address :

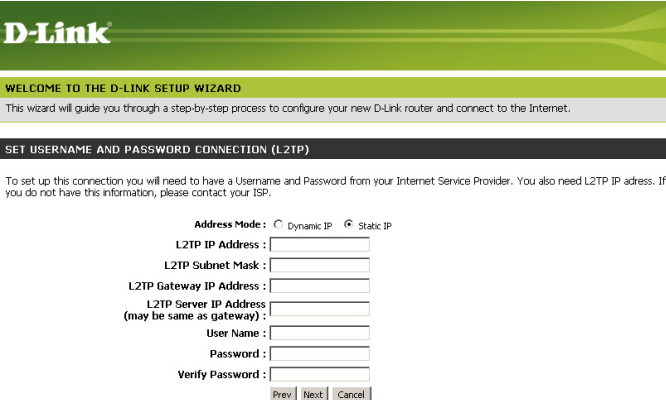
PPTP Server IP Address (may be same as gateway) :

User Name :

Password :

Verify Password :

If you selected L2TP, enter your L2TP username and password. Click **Next** to continue.



D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

SET USERNAME AND PASSWORD CONNECTION (L2TP)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need L2TP IP address. If you do not have this information, please contact your ISP.

Address Mode : ☐ Dynamic IP ☒ Static IP

L2TP IP Address :

L2TP Subnet Mask :

L2TP Gateway IP Address :

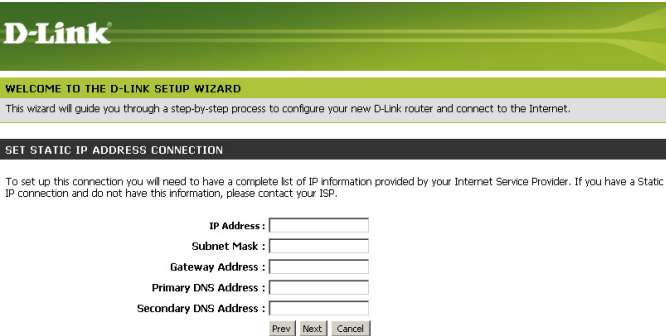
L2TP Server IP Address
(may be same as gateway) :

User Name :

Password :

Verify Password :

If you selected Static, enter your network settings supplied by your Internet provider. Click **Next** to continue.



D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

SET STATIC IP ADDRESS CONNECTION

To set up this connection you will need to have a complete list of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP.

IP Address :

Subnet Mask :

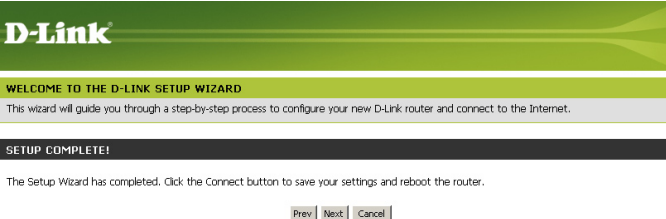
Gateway Address :

Primary DNS Address :

Secondary DNS Address :

Click Connect to save your settings. Once the router is finished rebooting, click Continue. Please allow 1-2 minutes to connect.

Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.



D-Link

WELCOME TO THE D-LINK SETUP WIZARD
This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

SETUP COMPLETE!

The Setup Wizard has completed. Click the Connect button to save your settings and reboot the router.

Internet Setup

Static (assigned by ISP)

Select 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 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: Enter the IP address assigned by your ISP.

Subnet Mask: Enter the Subnet Mask assigned by your ISP.

ISP Gateway: Enter the Gateway assigned by your ISP.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone 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 the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

Primary DNS Address: Enter the Primary DNS server IP address assigned by your ISP.

Secondary DNS Address: This is optional.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

The screenshot shows the D-Link EBR-2310 router's web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows 'INTERNET' and 'NETWORK SETTINGS'. The main content area is titled 'INTERNET CONNECTION' and provides instructions on selecting a connection type. Below this, the 'INTERNET CONNECTION TYPE' is set to 'Static IP'. The 'STATIC IP ADDRESS INTERNET CONNECTION TYPE' section contains fields for IP Address, Subnet Mask, ISP Gateway Address, MAC Address (with a 'Clone MAC Address' button), Primary DNS Address, Secondary DNS Address, and MTU. A 'Helpful Hints..' link is visible on the right side of the interface.

Internet Setup

Dynamic (Cable)

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

Host Name: The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone 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 the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

Primary DNS

Addresses: Enter the Primary DNS (Domain Name Server) server IP address assigned by your ISP.

Secondary DNS

Address: This is optional.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.

The screenshot shows the D-Link EBR-2310 Web Management Interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows a tree view with INTERNET and NETWORK SETTINGS. The main content area is titled "INTERNET CONNECTION" and contains the following sections:

- INTERNET CONNECTION TYPE:** A dropdown menu labeled "My Internet Connection is :" is set to "Dynamic IP (DHCP)".
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE:** This section includes:
 - Host Name : [text input]
 - MAC Address : [text input] - [text input] - [text input] - [text input] - [text input] - [text input] (optional)
 - A "Clone MAC Address" button.
 - Primary DNS Address : [text input]
 - Secondary DNS Address : [text input] (optional)
 - MTU : [text input]

Helpful Hints..

Internet Setup

PPPoE (DSL)

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

PPPoE: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

IP Address: Enter the IP address (Static PPPoE only).

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connection Mode Select: Select either Always-on, Manual, or Connect-on demand.

The screenshot shows the D-Link EBR-2310 router's web interface. The top navigation bar includes links for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows the menu structure with 'INTERNET' and 'NETWORK SETTINGS' highlighted. The main content area is titled 'INTERNET CONNECTION' and provides instructions on how to configure the Internet Connection type. Below this, the 'INTERNET CONNECTION TYPE' section shows a dropdown menu set to 'PPPoE (Username / Password)'. The 'PPPoE' section contains fields for User Name, Password, Retype Password, Service Name (optional), IP Address, MAC Address (with a Clone MAC Address button), Primary DNS Address, Secondary DNS Address (optional), Maximum Idle Time (in minutes), and MTU. At the bottom, the 'Connect mode select' section offers three options: Always-on, Manual, and Connect-on demand.

Internet Setup

PPTP

Choose PPTP (Point-to-Point-Tunneling Protocol) if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

PPTP: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

IP Address: Enter the IP address (Static PPTP only).

Subnet Mask: Enter the Primary and Secondary DNS Server Addresses (Static PPTP only).

Gateway: Enter the Gateway IP Address provided by your ISP.

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

Server IP: Enter the Server IP provided by your ISP (optional).

PPTP Account: Enter your PPTP account name.

PPTP Password: Enter your PPTP password and then retype the password in the next box.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connect Mode: Select either Always-on, Manual, or Connect-on demand.

D-Link

EBR-2310

SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET

NETWORK SETTINGS

INTERNET CONNECTION

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

Note: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

INTERNET CONNECTION TYPE

My Internet Connection is : PPTP (Username / Password)

PPTP

☒ Dynamic IP ☐ Static IP

IP Address :

Subnet Mask :

Gateway :

DNS :

Server IP/Name :

PPTP Account :

PPTP Password :

PPTP Retype password :

Maximum Idle Time : Minutes

MTU :

Connect mode select : ☐ Always-on ☐ Manual ☐ Connect-on demand

Helpful Hints..

Internet Setup

L2TP

Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses a L2TP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

L2TP: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

IP Address: Enter the IP address (Static L2TP only).

Subnet Mask: Enter the Primary and Secondary DNS Server Addresses (Static L2TP only).

Gateway: Enter the Gateway IP Address provided by your ISP.

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

Server IP: Enter the Server IP provided by your ISP (optional).

L2TP Account: Enter your L2TP account name.

L2TP Password: Enter your L2TP password and then retype the password in the next box.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connect Mode: Select either Always-on, Manual, or Connect-on demand.

D-Link

EBR-2310

SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET

NETWORK SETTINGS

INTERNET CONNECTION

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

Note: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

INTERNET CONNECTION TYPE

My Internet Connection is :

L2TP

☒ Dynamic IP ☐ Static IP

IP Address :

Subnet Mask :

Gateway :

DNS :

Server IP/Name :

L2TP Account :

L2TP Password :

L2TP Retype password :

Maximum Idle Time : Minutes

MTU :

Connect mode select : ☐ Always-on ☐ Manual ☐ Connect-on demand

Helpful Hints..

Internet Setup

Big Pond

User Name: Enter your Big Pond user name.

Password: Enter your Big Pond password and then retype the password in the next box.

Auth Server: Enter the IP address of the login server.

Login Server IP: Enter the IP address of the login server.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone 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 the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

The screenshot shows the D-Link EBR-2310 web interface. The top navigation bar includes links for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows 'INTERNET' and 'NETWORK SETTINGS'. The main content area is titled 'INTERNET CONNECTION' and provides instructions on selecting a connection type. Below this, the 'INTERNET CONNECTION TYPE' is set to 'BigPond (Australia)'. The 'BIGPOND' section contains fields for User Name, Password, Retype Password, Auth Server (set to sm-server), Login Server IP/Name (optional), and MAC Address (optional). A 'Clone MAC Address' button is located below the MAC Address field.

D-Link	
EBR-2310	SETUP ADVANCED TOOLS STATUS SUPPORT
INTERNET	INTERNET CONNECTION Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider. Note: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.
NETWORK SETTINGS	
	INTERNET CONNECTION TYPE My Internet Connection is : BigPond (Australia)
	BIGPOND User Name : <input type="text"/> Password : <input type="password"/> Retype Password : <input type="password"/> Auth Server : sm-server Login Server IP/Name : <input type="text"/> (optional) MAC Address : <input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/> (optional) <input type="button" value="Clone MAC Address"/>
	Helpful Hints..

Port Forwarding Rules

This will allow you to open a single port or a range of ports.

Rule: Check the box to enable the rule.

Name: Enter a name for the rule.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to.

Start Port/ Enter the port or ports that you want to open.

End Port: If you want to open 1 port, enter the same port in both boxes.

Traffic Type: Select **TCP**, **UDP**, or **ANY**.

The screenshot shows the D-Link EBR-2310 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, and ADVANCED NETWORK. The main content area is titled 'PORT FORWARDING RULES' and contains a description of the feature: 'The Port Forwarding option is used to open a single port or a range of ports through your firewall and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in various formats. Examples in the HELP panel.' Below the description are 'Save Settings' and 'Don't Save Settings' buttons. A table titled '20- PORT FORWARDING RULES' is partially visible, showing columns for Name, IP Address, Port Start, Port End, and Traffic Type. The first row shows a checkbox, a name field, an 'Application Name' dropdown, an 'IP Address' field, a 'Computer Name' dropdown, and a 'TCP' dropdown for Traffic Type.

Application Rules

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 WBR-1310.

Rule: Check the box to enabled the rule.

Name: Enter a name for the rule.

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

Firewall 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.

Traffic Type: Select **TCP**, **UDP**, or **ANY**.

The screenshot shows the D-Link EBR-2310 Advanced Network Configuration interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: PORT FORWARDING, APPLICATION RULES (selected), NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, and ADVANCED NETWORK. The main content area is titled 'APPLICATION RULES' and contains a description: 'The Application Rules option is used to open single or multiple ports in your firewall when the router senses data sent to the Internet on a outgoing "trigger" port or port range. Special Applications rules apply to all computers on your internal network.' Below the description are 'Save Settings' and 'Don't Save Settings' buttons. A table titled '10 - APPLICATION RULES' is shown with columns for Name, Application Name, Port, and Traffic Type. The table has two rows, each with a checkbox, a Name input field, an Application Name dropdown, and Port/Trigger/Firewall/Traffic Type fields.

	Name	Application Name	Port	Traffic Type
<input type="checkbox"/>	<input type="text"/>	<< Application Name	Trigger <input type="text"/> Firewall <input type="text"/>	TCP
<input type="checkbox"/>	<input type="text"/>	<< Application Name	Trigger <input type="text"/> Firewall <input type="text"/>	TCP

Network Filter

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. 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.

Configure MAC Filter: Select Disable MAC filters, allow MAC addresses listed below, or deny MAC addresses listed below.

MAC Address: Enter the MAC address you would like to filter. To find the MAC address on a computer, please refer to the Networking Basics section in this manual.

DHCP Client: Select a DHCP client from the drop-down menu and click << to copy that MAC Address.

The screenshot shows the D-Link EBR-2310 Advanced Network Filter configuration page. The page has a green header with the D-Link logo. Below the header is a navigation bar with tabs: SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The ADVANCED tab is selected. On the left side, there is a sidebar menu with options: PORT FORWARDING, APPLICATION RULES, NETWORK FILTER (selected), WEBSITE FILTER, FIREWALL SETTINGS, and ADVANCED NETWORK. The main content area is titled 'MAC FILTERING RULES' and contains the following text: 'The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/Internet access.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. Further down, there is a section titled '10 - MAC FILTERING RULES' which includes a dropdown menu to 'Configure MAC Filtering below:' with the option 'Turn MAC Filtering OFF' selected. Below this is a table with columns: Schedule, MAC Address, DHCP Client List, and an empty column. The table has two rows, each with a 'Always' dropdown in the Schedule column, an empty text box in the MAC Address column, a '<<' button, a dropdown menu in the DHCP Client List column (showing 'computer name'), and a 'CLEAR' button.

Website Filter

URL and domain blocking are used to deny LAN computers from accessing specific web sites by the URL or domain. 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. To use this feature, enter the text string to be blocked and click **Save Settings**. The text to be blocked will appear in the list. To delete the text, just highlight it and click **Delete** to remove the text.

Configure Website Filter: Select **Turn website filtering off**, **Turn website filtering on and allow access**, or **Turn website filtering on and deny access**.

Website URL/Domain: Enter the keywords or URLs that you want to block (or allow). Any URL with the keyword in it will be blocked.

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SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING
APPLICATION RULES
NETWORK FILTER
WEBSITE FILTER
FIREWALL SETTINGS
ADVANCED NETWORK

WEBSITE FILTERING RULES

The Web Filter options allows you to set-up a list of allowed Web sites that can be used by multiple users. When Web Filter is enabled, all other Web sites not listed on this page will be blocked.

Save Settings Don't Save Settings

20 - WEBSITE FILTERING RULES

Configure MAC Filtering below:
Turn Website Filtering OFF

Clear the list below...

Website URL/Domain	Website URL/Domain

Helpful Hints..

Firewall Settings

This section will allow you to setup a DMZ host and to enable VPN passthrough.

If you have a client PC that cannot run Internet applications properly from behind the WBR-2310, then you can set the client up for 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.

Enable DMZ Host: Check this box to enable DMZ.

DMZ IP Address: Enter the IP address of the computer you would like to open all ports to.

Enable PPTP Passthrough: Check this box to allow PPTP VPN traffic to pass through the router to your VPN client.

Enable L2TP Passthrough: Check this box to allow L2TP VPN traffic to pass through the router to your VPN client.

Enable IPSec Passthrough: Check this box to allow IPSec VPN traffic to pass through the router to your VPN client.

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SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING
APPLICATION RULES
NETWORK FILTER
WEBSITE FILTER
FIREWALL SETTINGS
ADVANCED NETWORK

FIREWALL SETTINGS

The Web Filter options allows you to set-up a list of allowed Web sites that can be used by multiple users. When Web Filter is enabled, all other Web sites not listed on this page will be blocked.

Save Settings Don't Save Settings

DMZ HOST

The DMZ (Demilitarized Zone) option provides you with an option to set a single computer on your network outside of the router. If you have a computer that cannot run Internet applications successfully from behind the router, then you can place the computer into the DMZ for unrestricted Internet access.

Note: Putting a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

Enable DMZ Host : ☐

DMZ IP Address : << Select Machine

Schedule : Always

VPN PASSTHROUGH

Enable PPTP Passthrough : ☐

Enable L2TP Passthrough : ☐

Enable IPSec Passthrough : ☐

Helpful Hints..

Advanced Network Settings

UPnP Settings: To use the Universal Plug and Play (UPnP™) feature click on **Enabled**. UPnP provides compatibility with networking equipment, software and peripherals.

WAN Ping: Unchecking the box will not allow the WBR-2310 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the WAN port to be “pinged”.

WAN select to 10/100 Mbps: You may set the port speed of the WAN port to 10Mbps, 100Mbps, or auto. Some older cable or DSL modems may require you to set the port speed to 10Mbps.

Gaming Mode: Gaming mode allows a form of pass-through for certain Internet Games. If you are using Xbox, Playstation2 or a PC, make sure you are using the latest firmware and Gaming Mode is enabled. To utilize Gaming Mode, click the box. If you are not using a Gaming application, it is recommended that you Disable Gaming Mode.

Multicast streams: Check the box to allow multicast traffic to pass through the router from the Internet.

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SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING
APPLICATION RULES
NETWORK FILTER
WEBSITE FILTER
FIREWALL SETTINGS
ADVANCED NETWORK

NETWORK SETTINGS

If you are not familiar with these Advanced Network settings, please read the help section before attempting to enable or disable them.

Save Settings Don't Save Settings

UPNP

Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices.

Enable UPnP : ☐

WAN PING

If you enable this feature your WAN IP Address will respond to direct requests from the Internet.

Enable WAN Ping Respond : ☐

WAN SELECT TO 10/100 MBPS

100Mbps

GAMING MODE

If you are having difficulties playing some online games - please enable this mode

Enable GAMING mode : ☐

MULTICAST STREAMS

Enable Multicast Streams: ☐

Helpful Hints..

Administrator Settings

This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts 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. Only the admin account has the ability to change both admin and user account passwords.

Administrator Password: Enter the new password for the Administrator login. The administrator can make changes to the settings.

User Password: Enter the new password for the User login. If you login as the User, you can only see the settings, but cannot change them.

Remote Management: Remote management allows the WBR-1310 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: The Internet IP address of the computer that has access to the Broadband Router. If you input an asterisk (*) into this field, then any computer will be able to access the Router. Putting an asterisk (*) into this field would present a security risk and is not recommended.

Port: The port number used to access the WBR-1310.

Example: <http://x.x.x.x:8080> whereas x.x.x.x is the WAN IP address of the WBR-1310 and 8080 is the port used for the Web-Management interface.

The screenshot displays the D-Link EBR-2310 web management interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists menu items: ADMIN, TIME, SYSTEM, FIRMWARE, and SYSTEM CHECK. The main content area is titled 'ADMINISTRATOR SETTINGS' and contains the following sections:

- ADMINISTRATOR SETTINGS:** A text block explaining that there are two accounts, 'admin' and 'user'. 'Admin' has read/write access, while 'user' has read-only access. Only the 'admin' account can change passwords. Below this text are 'Save Settings' and 'Don't Save Settings' buttons.
- ADMINISTRATOR (THE DEFAULT LOGIN NAME IS "ADMIN"):** A form with three input fields: 'Login name', 'New Password', and 'Confirm Password'.
- USER (THE DEFAULT LOGIN NAME IS "USER"):** A form with three input fields: 'Login name', 'New Password', and 'Confirm Password'.
- REMOTE MANAGEMENT:** A section with a checkbox for 'Enable Remote Management', an 'IP Address' input field, and a 'Port' dropdown menu currently set to '8080'.

A 'Helpful Hints...' link is visible on the right side of the interface.

Time Settings

Automatic: NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. This field is optional.

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. Click Set Time.

Time Zone: Select the Time Zone from the drop-down menu.

Daylight Saving: To select Daylight Saving time manually, select enabled or disabled, and enter a start date and an end date for daylight saving time.

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SETUP ADVANCED **TOOLS** STATUS SUPPORT

ADMIN
TIME
SYSTEM
FIRMWARE
SYSTEM CHECK

TIME

Time Configuration

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed

Save Settings Don't Save Settings

TIME CONFIGURATION

Time :
Time Zone : (GMT-12:00) Eniwetok, Kwajalein

Enable Daylight Saving ☐

Daylight Saving Settings :
Daylight Saving Offset -2:00

Month Week Day of Week Time

DST Start Jan 1st Sun 12 am

DST End Jan 1st Sun 12 am

AUTOMATIC TIME CONFIGURATION

Enable NTP server : ☐

NTP Server Used : << Select NTP Server

SET THE DATE AND TIME MANUALLY

Current Gateway Time :

Year 2002 Month Jan Day 01

Hour 00 Minute 00 Second 00 AM

Copy Your Computer's Time Settings

Helpful Hints..

System Settings

Save Settings to Local Hard Drive: Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the Save button. You will then see a file dialog, where you can select a location and file name for the settings.

Load Settings from Local Hard Drive: Use this option to load previously saved router configuration settings. First, use the Browse control to find a previously save file of configuration settings. Then, click the Load button to transfer those settings to the router.

Restore to Factory Default Settings: This option will restore all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, use the Save button above.

The screenshot shows the D-Link EBR-2310 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists menu items: ADMIN, TIME, SYSTEM, FIRMWARE, and SYSTEM CHECK. The main content area is titled 'SYSTEM SETTINGS' and contains the following text: 'The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file created by device can be uploaded into the unit.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. Further down, there are three sections: 'Save Settings To Local Hard Drive' with a 'Save' button; 'Load Settings From Local Hard Drive' with a text input field, a 'Browse...' button, and an 'Upload Settings' button; and 'Restore To Factory Default Settings' with a 'Restore Device' button. At the bottom, there is a 'Reboot' button labeled 'Reboots the EBR-2310'.

Firmware Upgrade

You can upgrade the firmware of the Router here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support site for firmware updates at <http://support.dlink.com>. You can download firmware upgrades to your hard drive from the D-Link support site.

Firmware Upgrade: Click on the link in this screen to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

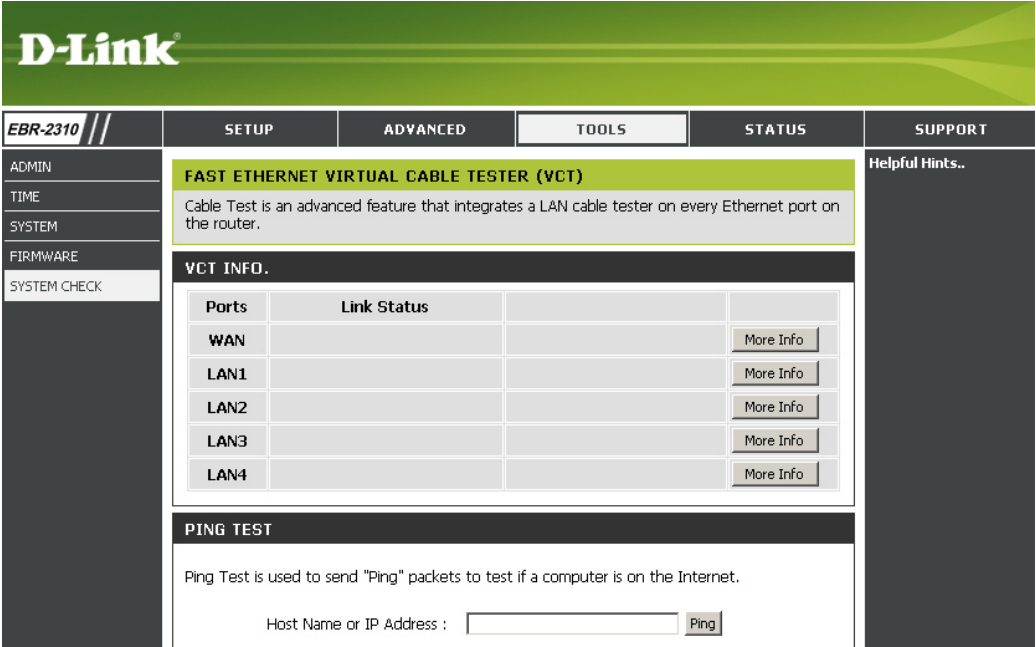
Browse: After you have downloaded the new firmware, click Browse in this window to locate the firmware update on your hard drive. Click **Save Settings** to complete the firmware upgrade.

D-Link	
EBR-2310	<div> <div>SETUP</div> <div>ADVANCED</div> <div>TOOLS</div> <div>STATUS</div> <div>SUPPORT</div> </div>
<div> <div>ADMIN</div> <div>TIME</div> <div>SYSTEM</div> <div>FIRMWARE</div> <div>SYSTEM CHECK</div> </div>	<div> <div>FIRMWARE UPGRADE</div> <div> <p>There may be new firmware for your EBR-2310 to improve functionality and performance. Click here to check for an upgrade on our support site.</p> <p>To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Apply button below to start the firmware upgrade.</p> <div> <div>Save Settings</div> <div>Don't Save Settings</div> </div> </div> <div> <div>CURRENT FIRMWARE INFO.</div> <div> <div>Current Firmware Version</div> <div>Firmware Date</div> <div> <input type="text"/> <div>Browse...</div> </div> </div> </div> </div>

System Check

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

Ping Test: The Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the IP Address that you wish to Ping, and click **Ping**.



Device Information

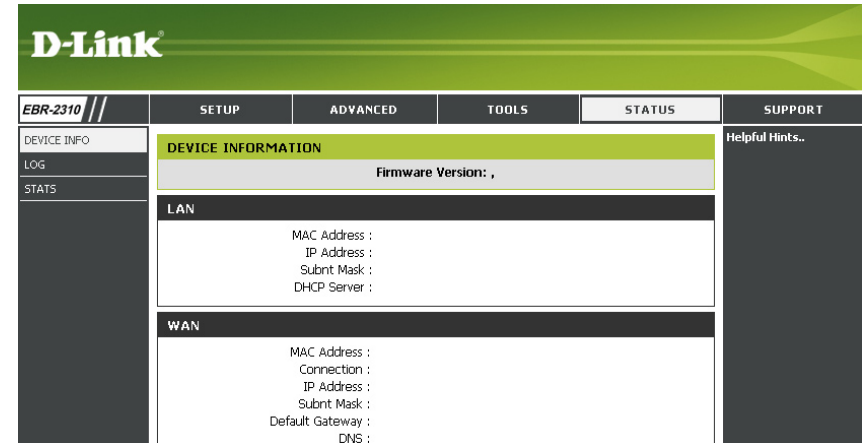
This page displays the current information for the WBR-2310. It will display the LAN, WAN, and Wireless information.

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

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

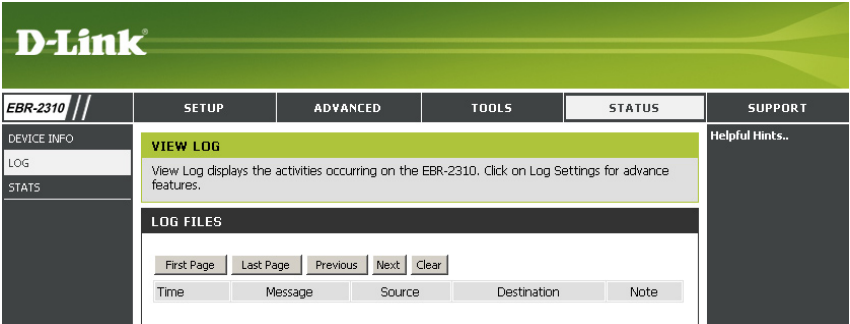
LAN: Displays the MAC address and the private (local) IP settings for the router.

WAN: Displays the MAC address and the public IP settings for the router.



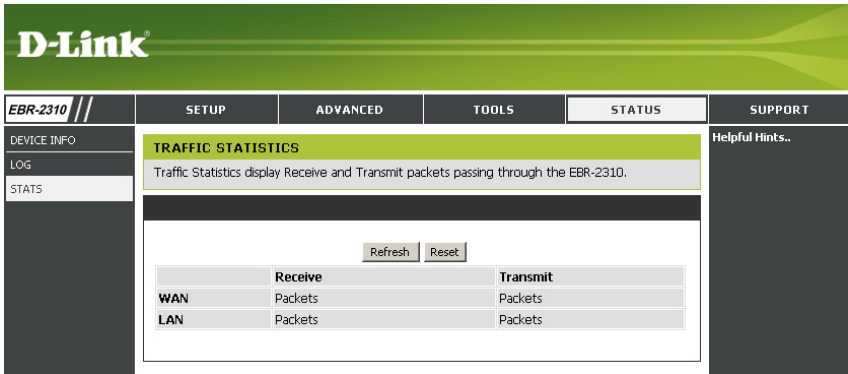
Log

- First Page:** View the first page of the log.
- Last Page:** View the last page of the log.
- Previous:** View the previous page.
- Next:** View the next page.
- Clear:** Clear the log.



Stats

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the WBR-2310 on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.



Support

EBR-2310

///

SETUP

ADVANCED

TOOLS

STATUS

SUPPORT

MENU

SUPPORT MENU

Setup

- [Setup Wizard](#)
- [WAN Settings](#)
- [LAN Settings](#)
- [DHCP Server](#)

Advanced

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Tools

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Status

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FAQs

Helpful Hints..

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the EBR-2310. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (192.168.0.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
 - Internet Explorer 6.0 or higher
 - Netscape 8 or higher
 - Mozilla 1.7.12 (5.0) or higher
 - Opera 8.5 or higher
 - Safari 1.2 or higher (with Java 1.3.1 or higher)
 - Camino 0.8.4 or higher
 - Firefox 1.5 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:
 - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.
 - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
 - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
 - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your the web management.
- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.0.1. When logging in, the username is **admin** and leave the password box empty.

3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

Note: AOL DSL+ users must use MTU of 1400.

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and ME users type in **command** (Windows® NT, 2000, and XP users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

ping [url] [-f] [-l] [MTU value]

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping yahoo.com -f -l 1472
Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:
Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 93ms, Maximum = 203ms, Average = 132ms
C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, let's say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with ($1452+28=1480$).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

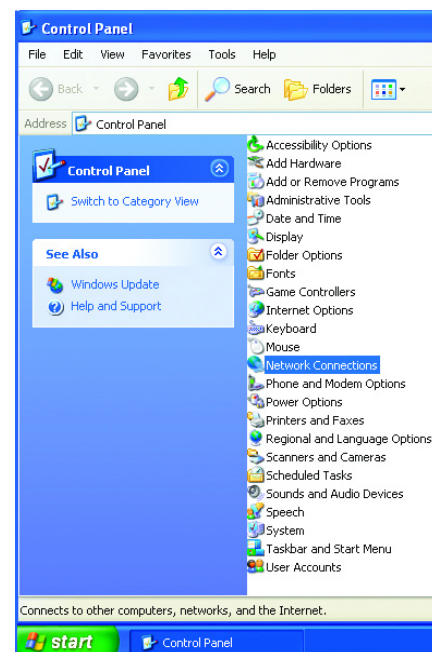
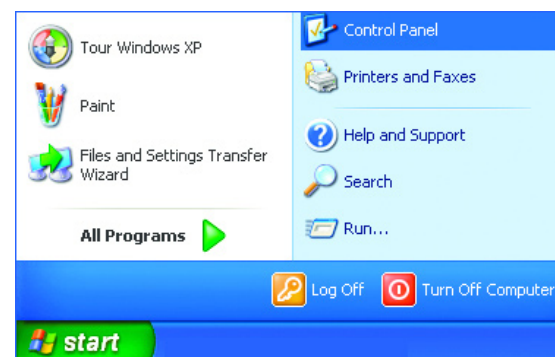
- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on the **Home** tab and click the **WAN** button.
- To change the MTU enter the number in the MTU field and click the **Apply** button to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Assigning a Static IP Address (for Windows® 2000/XP)

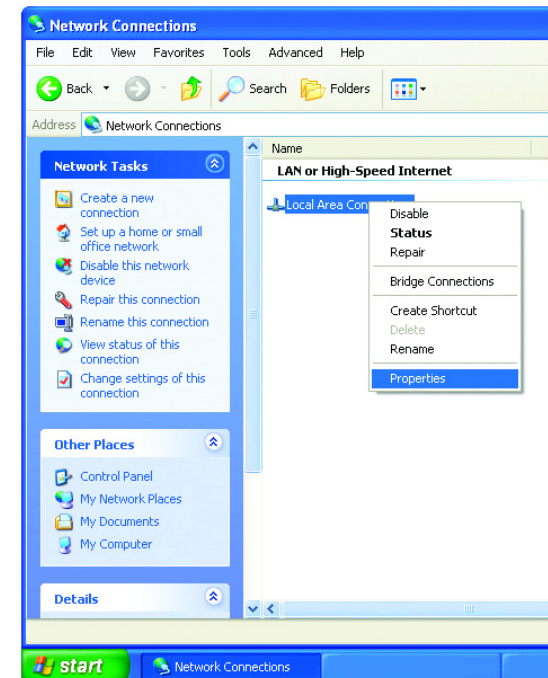
Note: Broadband Routers will automatically assign IP Addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable Gateway/Router you will not need to assign Static IP Addresses.

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

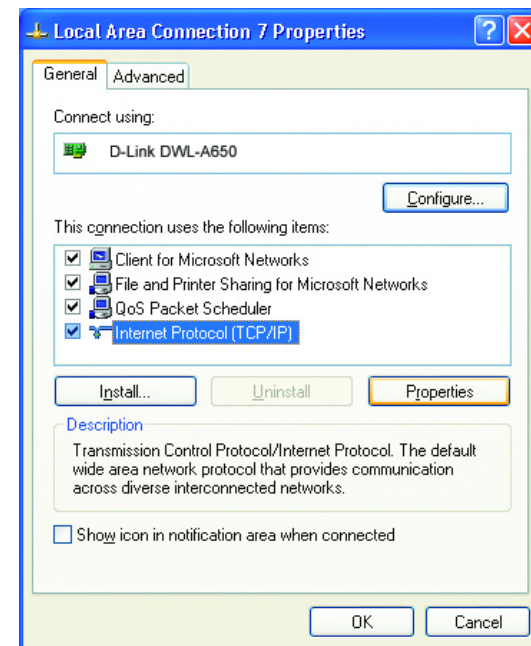
- Go to **Start**
- **Double-click** on **Control Panel**
- **Double-click** on **Network Connections**



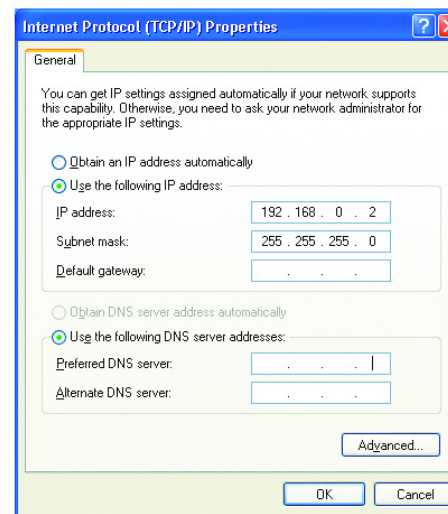
- **Right-click on Local Area Connections.**
- **Double-click Properties**



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

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**

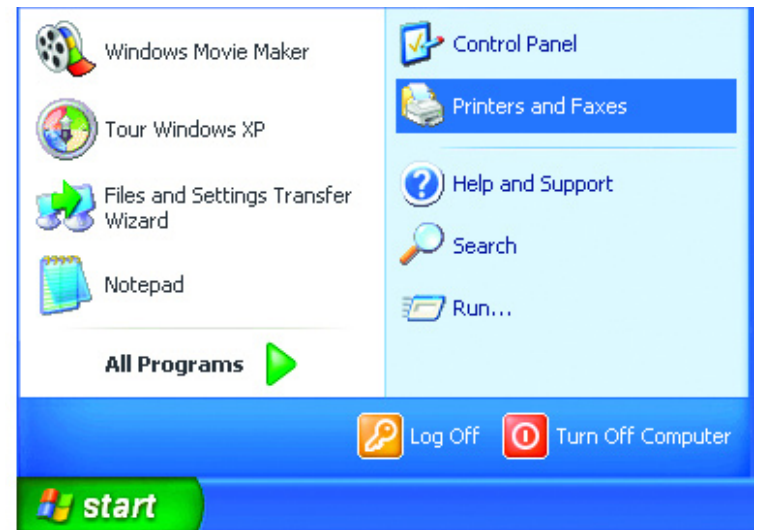
1. Adding a local printer
2. Sharing an network printer
3. Sharing an LPR printer

Adding a local printer

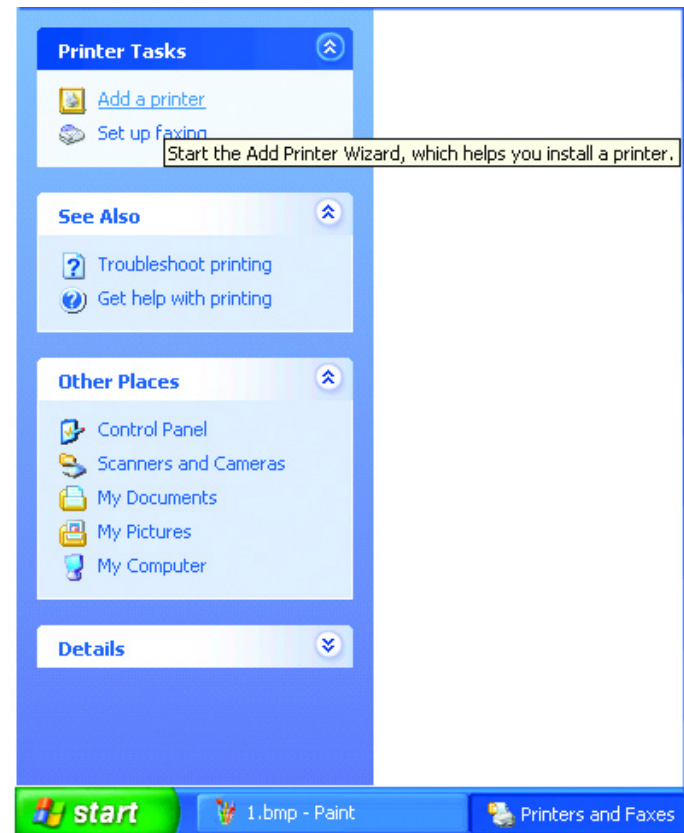
(A printer connected directly to a computer)

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

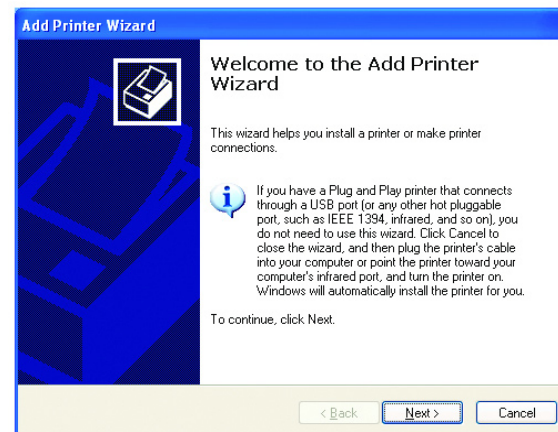
- Go to **Start> Printers and Faxes**



- Click on **Add a printer**



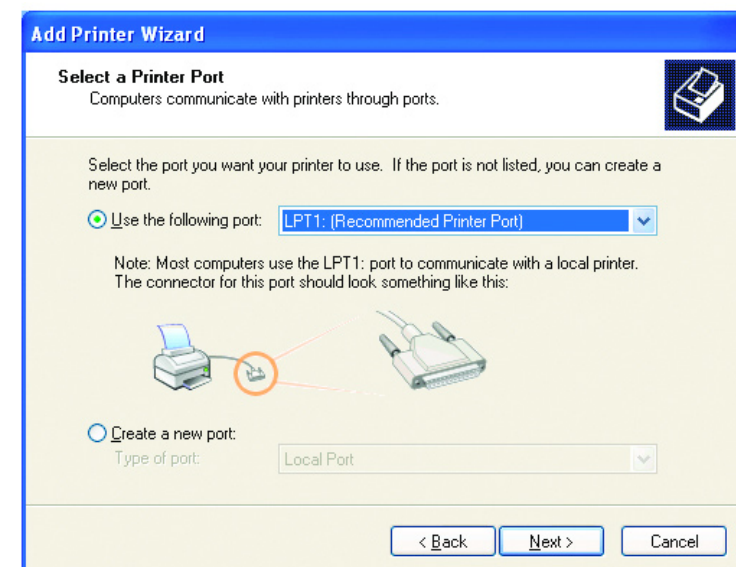
- Click **Next**



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

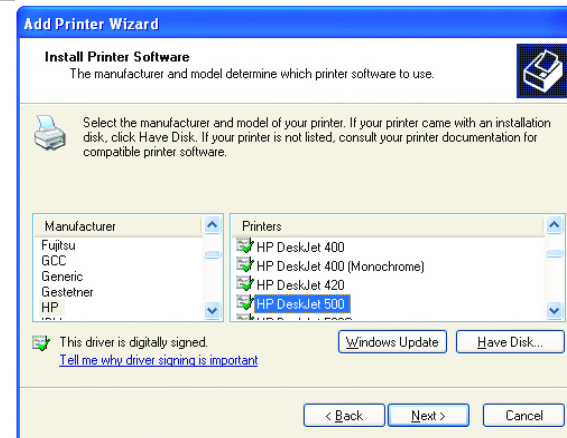


- Select **Use the following port:**
 - From the pull-down menu **select the correct port** for your printer
- (Most computers use the **LPT1:** port, as shown in the illustration.)*
- Click **Next**

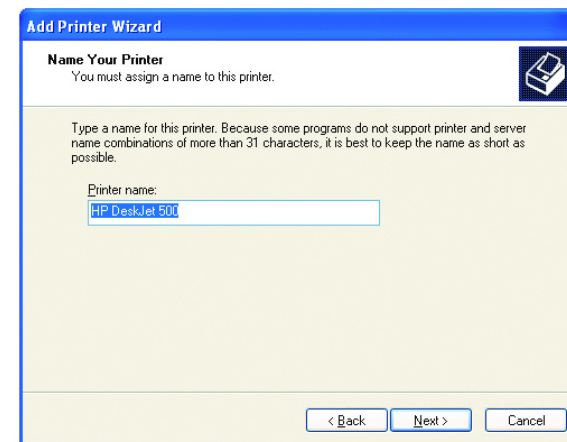


- Select and highlight the **correct driver** for your printer.
- Click **Next**

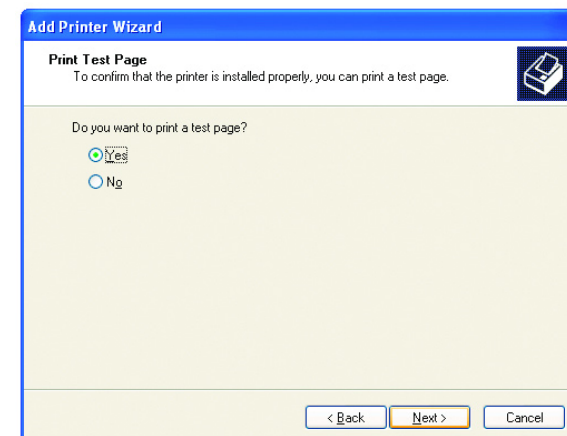
*(If the correct driver is not displayed, insert the CD or floppy disk that came with your printer and click **Have Disk.**)*



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



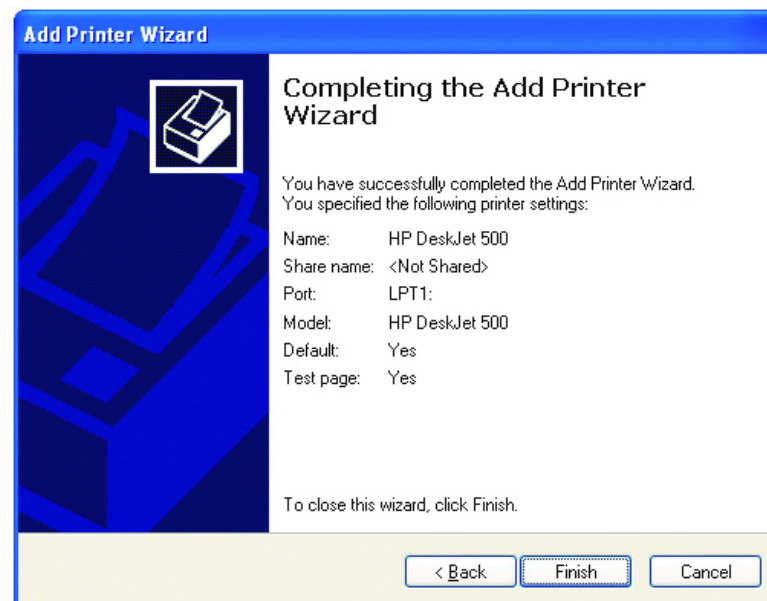
- Select **Yes**, to print a test page. A successful printing will confirm that you have chosen the correct driver.
- Click **Next**



This screen gives you information about your printer.

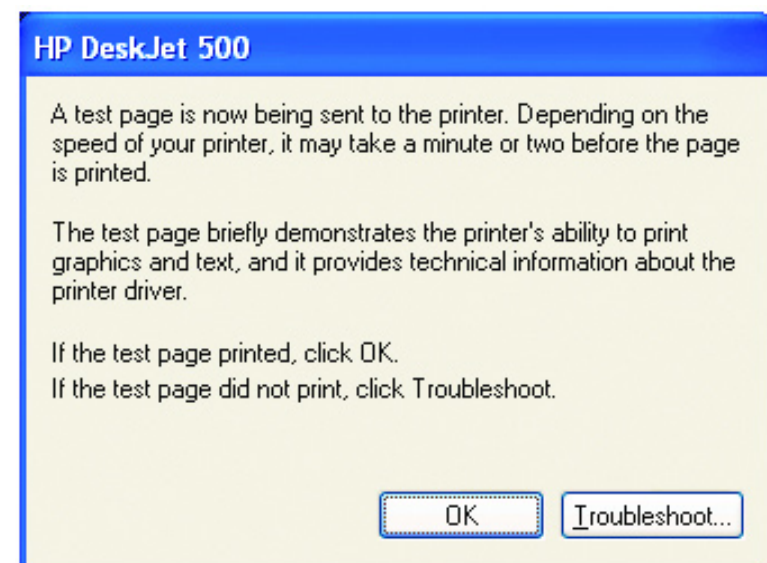
(The printer will begin to print a test page)

Click **Finish**



When the test page has printed,

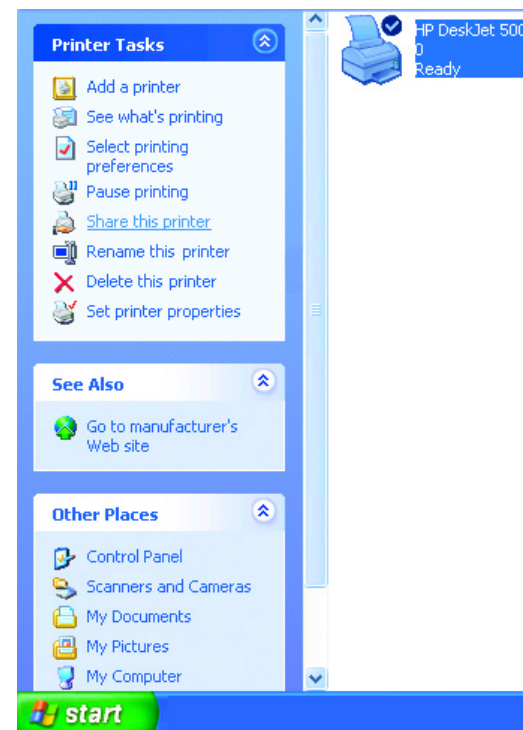
Click **OK**



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

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

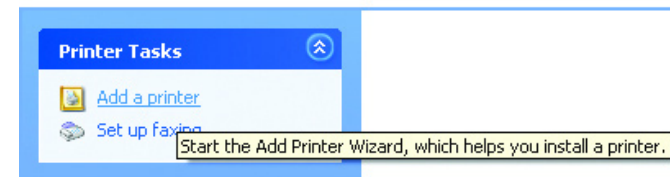
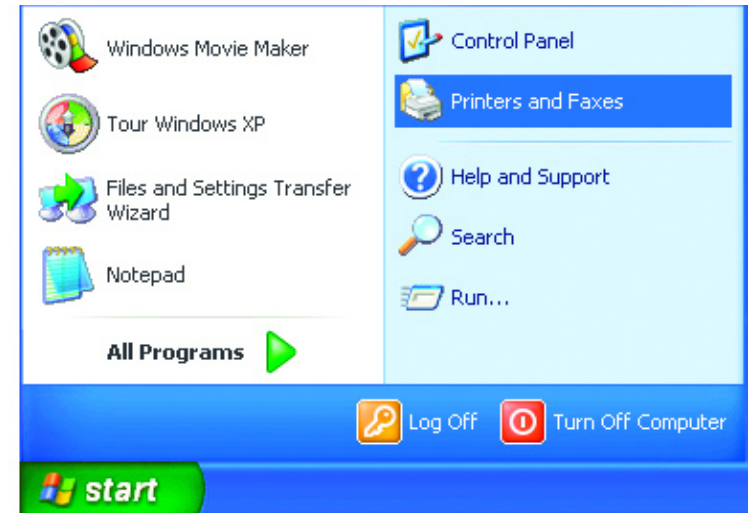
You have successfully added a local printer.



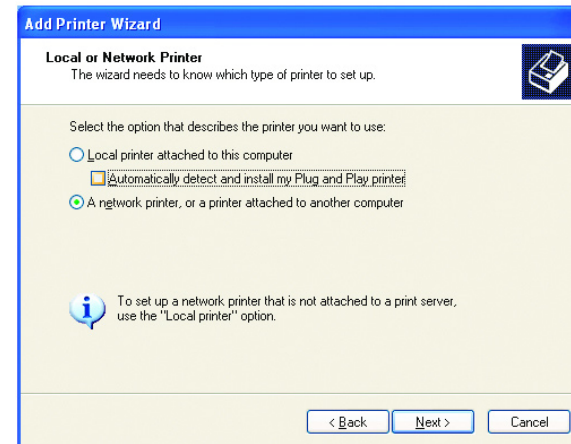
Sharing a Network Printer

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:

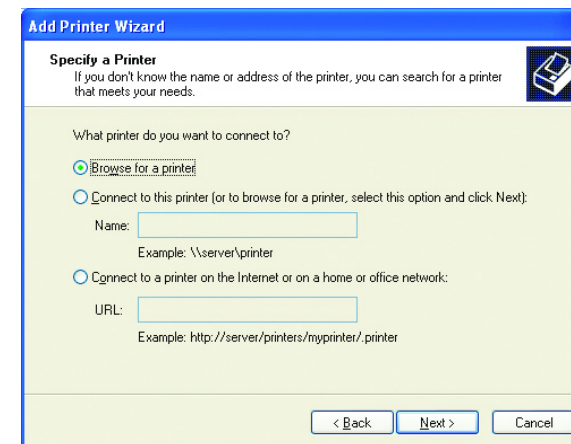
- Go to **Start**>
- **Printer and Faxes**
- Click on **Add a Printer**
- Click **Next**



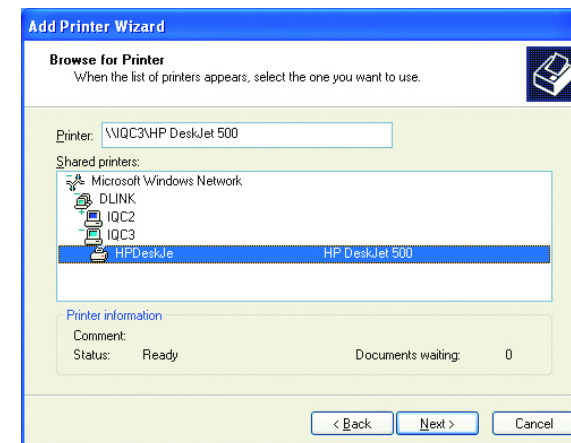
- Select **Network Printer**
- Click **Next**



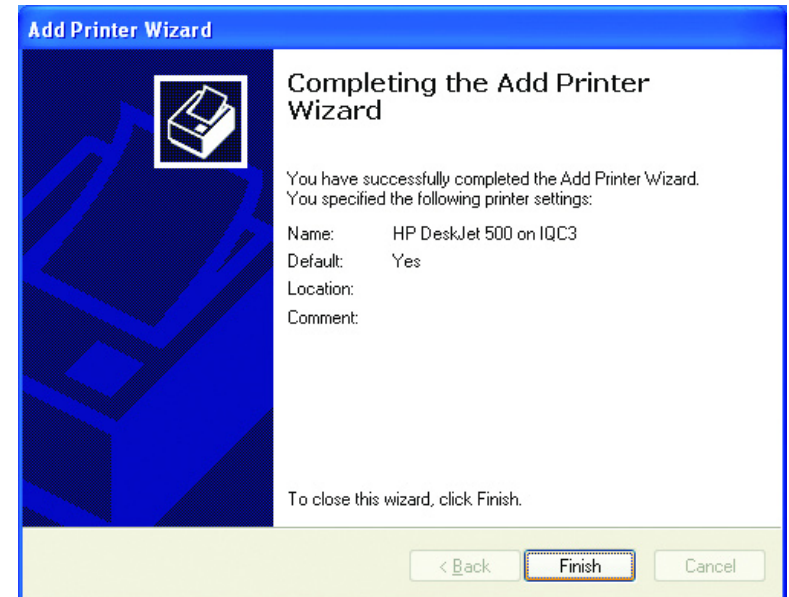
- Select **Browse for a printer**
- Click **Next**



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

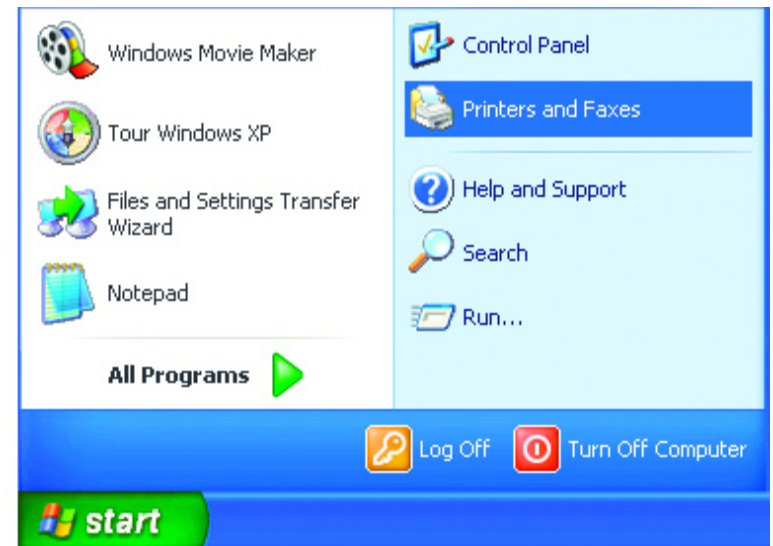


- Click **Finish**



To check for proper installation:

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



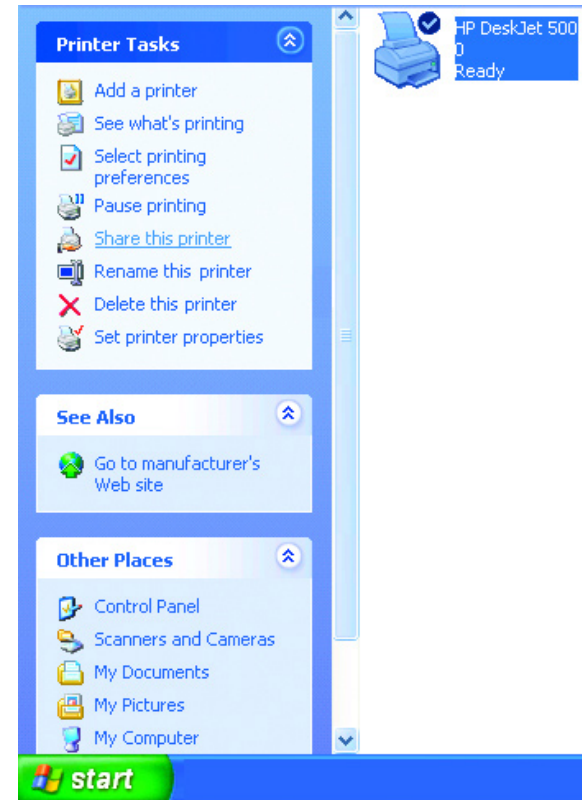
The printer icon will appear at right, indicating proper installation.

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.



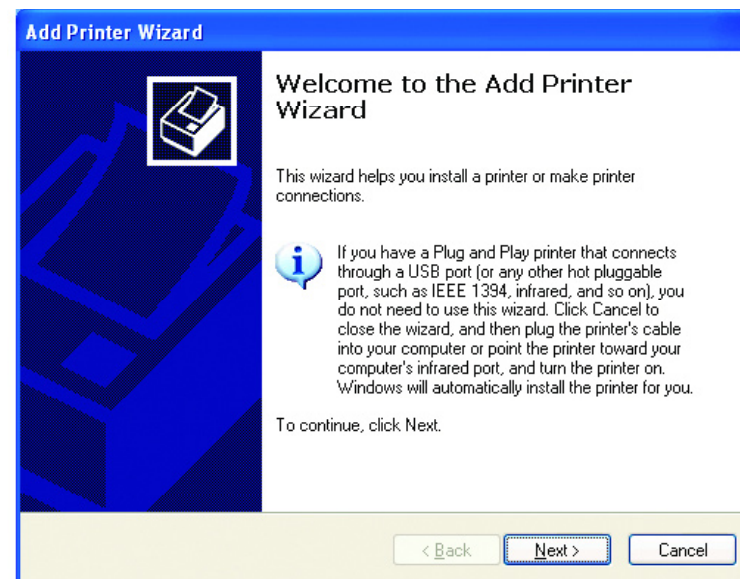
Sharing an LPR Printer

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:

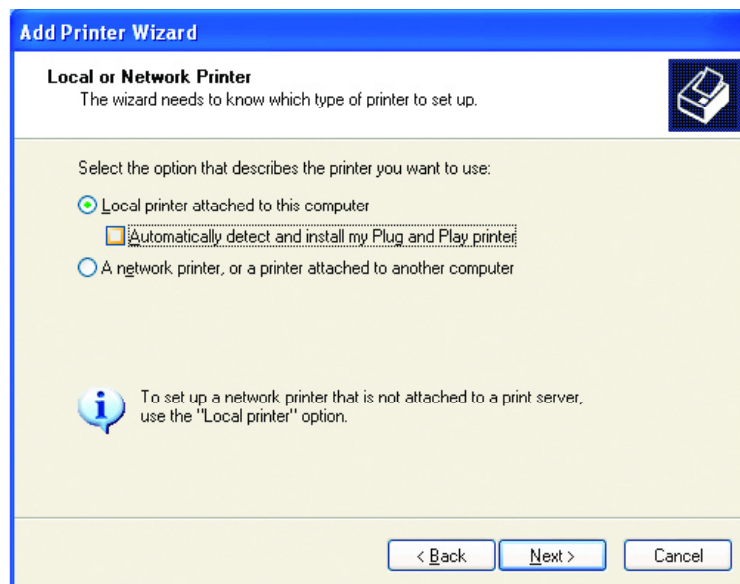
- Go to **Start > Printers and Faxes**
- Click on **Add a Printer**

The screen to the right will display.

- Click **Next**



- Select **Local printer...**
- Click **Next**



- Select **Create a new port**

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

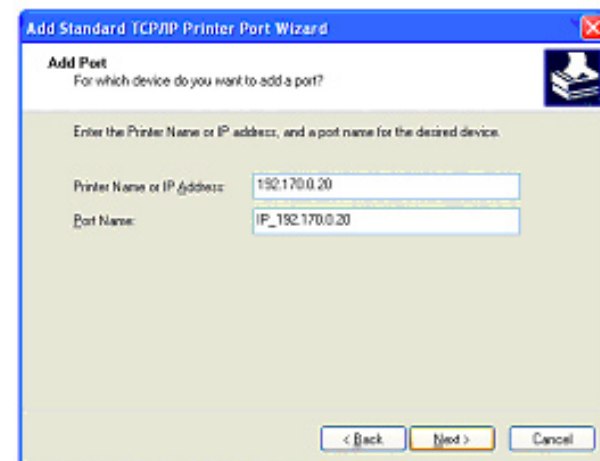
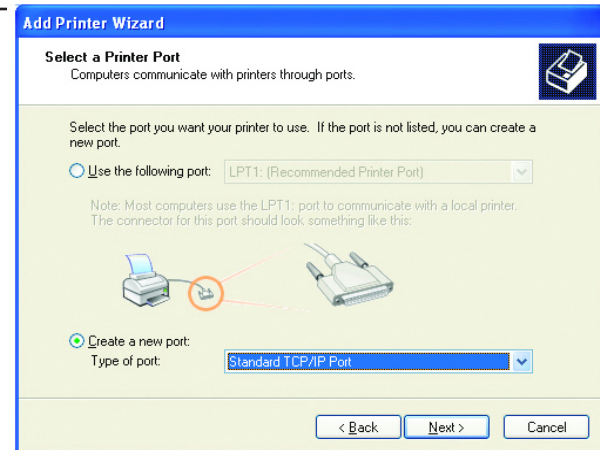
- Click **Next**

- Please read the instructions on this screen.

- Click **Next**

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

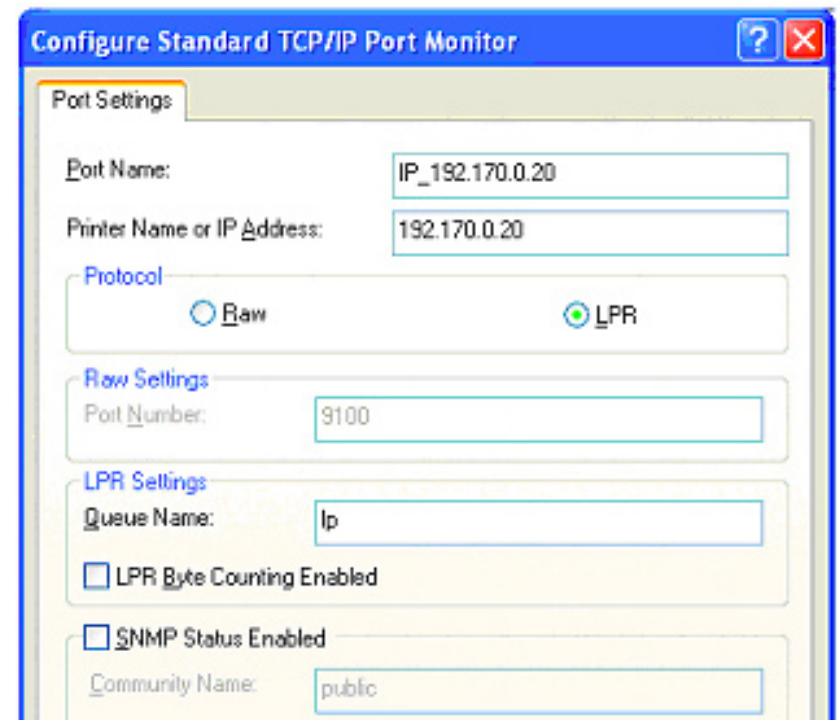
- Click **Next**



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



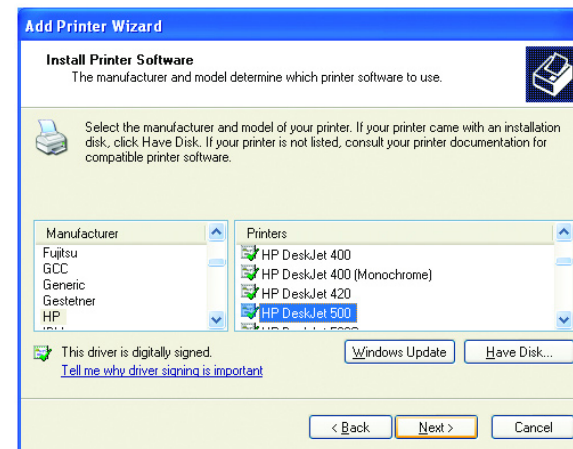
- Enter the **Port Name** and the **Printer Name or IP Address**.
- Select **LPR**
- Enter a **Queue Name** (if your Print-Server/Gateway has more than one port, you will need a **Queue name**.)
- Click **OK**



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

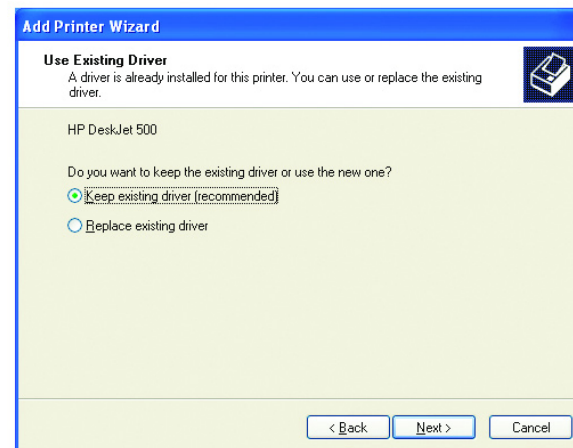


- Select the **printer** you are adding from the list of **Printers**.
- Insert the printer driver disk that came with your printer.
- Click **Have Disk**



If the printer driver is already installed,

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



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

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

- Click **Next**

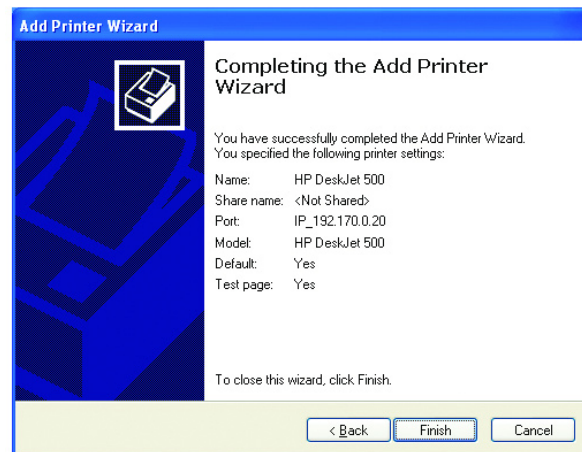
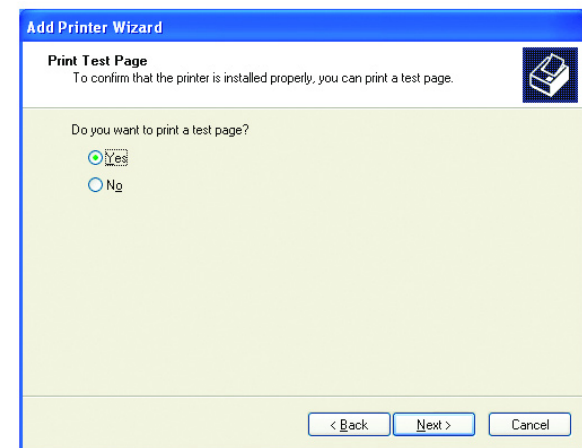
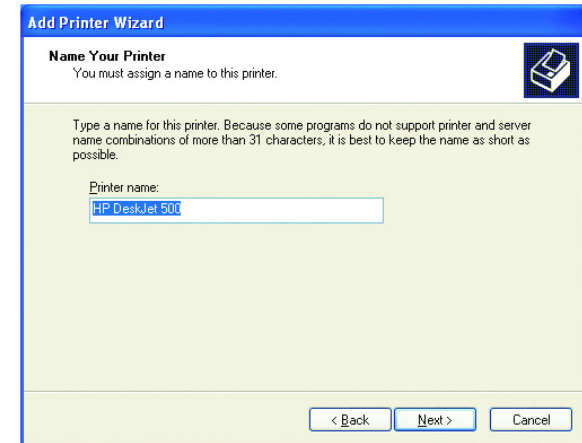
- Select **Yes**, to print a test page.

- Click **Next**

This screen will display information about your printer.

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

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



Networking Basics

Check your IP address

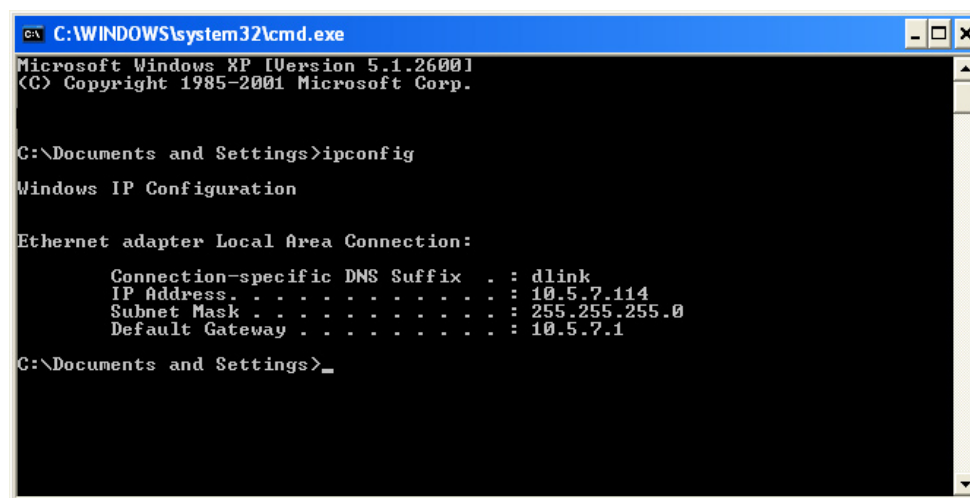
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address. . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and Settings>
```

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.

Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1

Windows® XP - Click on **Start > Control Panel > Network Connections**.

Windows® 2000 - From the desktop, right-click **My Network Places > Properties**.

Step 2

Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

Step 3

Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

Step 4

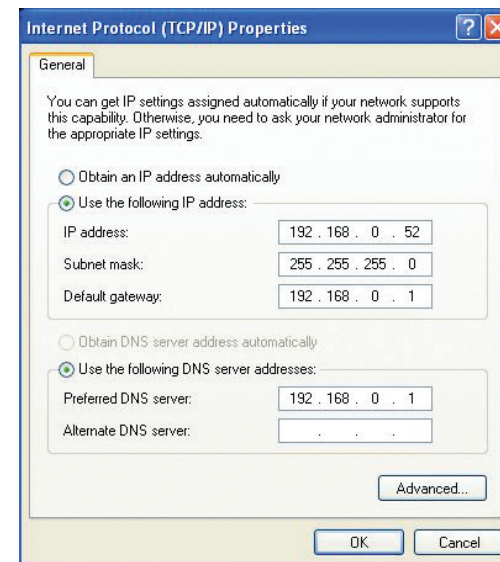
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5

Click OK twice to save your settings.



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

1-Year

Contacting Technical Support

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product. U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. EBR-2310)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the router).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within the United States:

Phone Support:

(877) 453-5465

24 hours a day, seven days a week.

Internet Support:

<http://support.dlink.com>

support@dlink.com

For customers within Canada:

Phone Support:

(800) 361-5265

Monday to Friday 7:30am to 9:00pm EST

Internet Support:

<http://support.dlink.ca>

[email:support@dlink.ca](mailto:support@dlink.ca)

Warranty

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

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

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

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

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is □

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

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

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

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with p□
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

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

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered,

tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

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CE Mark Warning: This is a Class B product. In a do

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed wa

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Registration



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

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