



**User Manual** 

## **Ethernet Broadband Router**

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## **Package Contents**



EBR-2310 Ethernet Broadband Router



**Power Adapter** 



**CAT5 Ethernet Cable** 



CD with drivers and software

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

## **System Requirements**

- Ethernet-based Cable or DSL Modem
- Computers with Windows<sup>a</sup>, Macintosh<sup>a</sup>, 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**

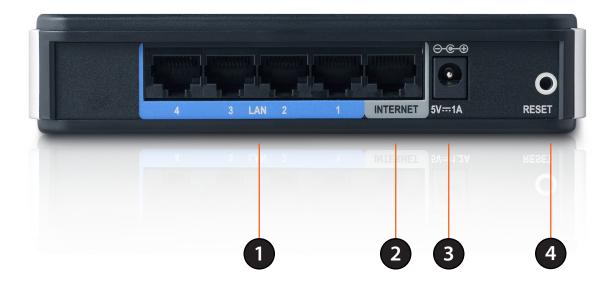
- QoS Engine Helps to improve your network gaming performance by prioritizing applications.
- **Broadband Modem and IP Sharing** Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection.
- Ethernet Switch Allows you to quickly and easily share an Internet connection 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



1	Power	Power indicator will light Green.
2	Internet	The Internet status indicator will light Green when there is a good physical Internet connection.
3	LAN Link/Act	Link status indicators light Green. The LED flickers when the corresponding port is sending or receiving data.

## **Rear Panel**



1	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-adapter-equipped computer in your local area network (LAN).
2	Internet*	The Internet port socket (CAT5 Ethernet RJ-45 cable). This is where you will connect your Cable or DSL.
3	Power	Connect one end of your included power adapter to the power port and the other end into your power outlet.
4	Reset	Used to restore the EBR-2310 back to factory default settings.

<sup>\*</sup>All ports (both LAN & Internet) 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

### **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  $32^{\circ}F \sim 131^{\circ}F$ Humidity  $5\% \sim 90\%$ 

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).

## **Getting Started**

The EBR-2310 includes a Quick Router Setup Wizard CD. Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process.

Insert the **Quick Router Setup Wizard CD** in the CD-ROM drive. The step-by-step instructions that follow are shown in Windows XP. The steps and screens are similar for the other Windows operating systems.

If the CD Autorun function does not automatically start on your computer, go to **Start** > **Run**. In the run box type "**D:\autorun.exe**" (where **D:** represents the drive letter of your CD-ROM drive).

When the autorun screen appears, click the orange **Install Router** button.

**Note:** It is reccomended to write down the login password on the provided CD holder.

## 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**. You may also use **http://dlinkrouter/**.

For example: http://192.168.0.1



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

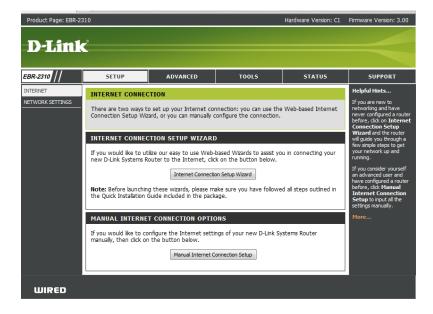
To log in as an administrator, enter the username of "admin" and the password (there isn't a default password, leave it blank). Click the OK button. If the password is correct, the web-management interface will appear.

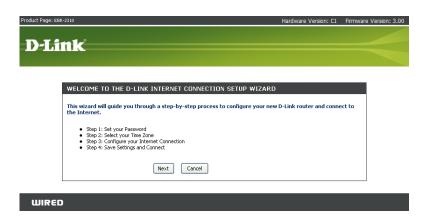
## **Setup Wizard**

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

Click Internet Connection Setup Wizard to launch the wizard.

Click **Next** to continue.





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

D-Link

SIEP 1: SET YOUR PASSWORD

By default, your new D-Link Router does not have a password configured for administrator access to the Webbased configuration pages. To secure your new networking device, please set and verify a password below:

Password:

Verify Password:

Prev Next Cancel

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



WIRED

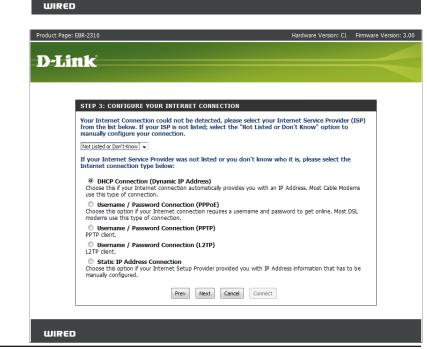
STEP 2: SELECT YOUR TIME ZONE

Select the appropriate time zone for your location. This information is required to configure the time-based options for the router.

[GRIT-08:00) Pacific Time (US/Canada), Tiluana

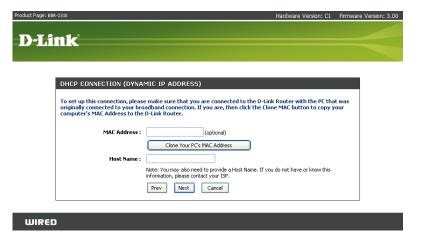
Prey Next Cancel

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



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.

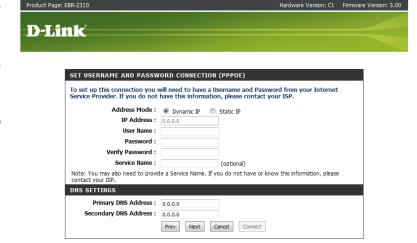
The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.



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.



	to have a Username and Password from your Internet adress. If you do not have this information, please contact
Address Mode :	Dynamic IP
PPTP IP Address :	0.0.0.0
PPTP Subnet Mask :	0.0.0.0
PPTP Gateway IP Address :	0.0.0.0
PPTP Server IP Address (may be same as gateway) :	
User Name :	
Password :	
Verify Password :	
ONS SETTINGS	
Primary DNS Address : 0.0.0.0	
Secondary DNS Address: 0.0.0.0	
Prev	Next Cancel Connect

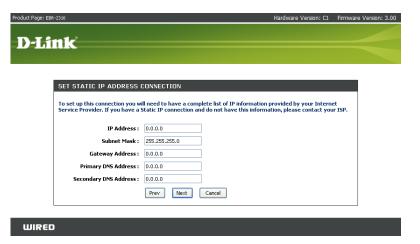
If you selected L2TP, enter your L2TP username and password. Click **Next** to continue.



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 adress. If you do not have this information, please contact your ISP.		
Address Mode :	Dynamic IP	
L2TP IP Address :	0.0.0.0	
L2TP Subnet Mask:	0.0.0.0	
L2TP Gateway IP Address :	0.0.0.0	
L2TP Server IP Address :		
User Name :		
Password :		
Verify Password :		
DNS SETTINGS		
Primary DNS Address: 0.0.0.0	0	
Secondary DNS Address: 0.0.0.0	0	
Prev	Next Cancel Connect	

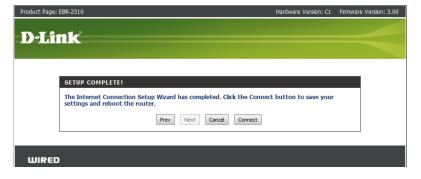
WIRED

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



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.



## Internet Setup Static (assigned by ISP)

Select Static IP Address if all the Internet port's 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.

**Default Gateway:** Enter the Gateway assigned by your ISP.

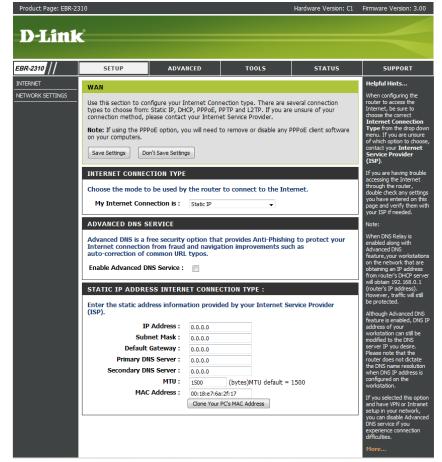
**DNS Servers:** The DNS server information will be supplied by your ISP (Internet

Service Provider).

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

MTU.

MAC Address: The default MAC Address is set to the Internet port'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. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.



## Manual Configuration Dynamic (Cable)

**My Internet** Select **Dynamic IP (DHCP)** to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give **Connection:** 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.

**Use Unicasting:** Check the box if you are having problems obtaining an

IP address from your ISP.

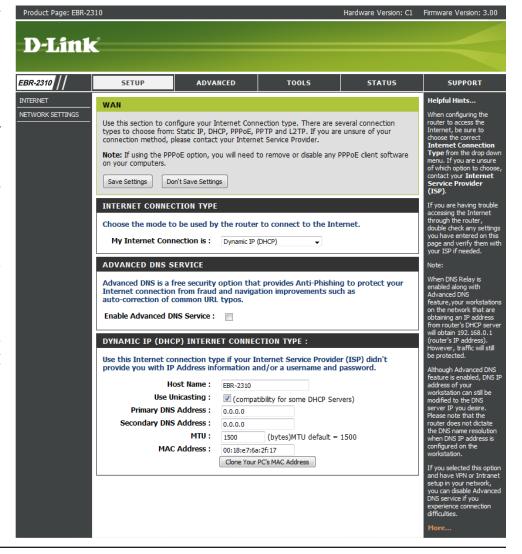
DNS Addresses: Enter the Primary DNS server IP address assigned by

your ISP.

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

1500 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port'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. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.



## 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.

My Internet Select PPPoE (Username/Password) from the drop-down menu.

**Connection:** 

Address Mode: Select Static if your ISP assigned you the IP address, subnet mask, gateway, and

DNS server addresses. In most cases, select **Dynamic**.

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

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).

Reconnection Select either Always-on, On-Demand, or Manual.

Mode:

Maximum Idle Enter a maximum idle time during which the Internet connection is maintained during

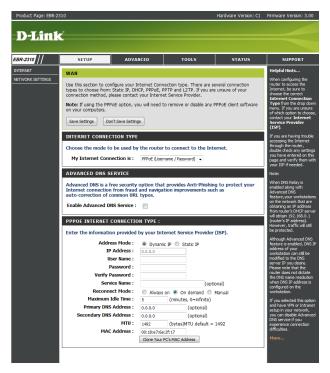
Time: inactivity. To disable this feature, enable Auto-reconnect.

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

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

MAC Address: The default MAC Address is set to the Internet port'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. You can use the **Clone Your PC's MAC Address** button to

replace the Internet port's MAC address with the MAC address of your Ethernet card.



#### **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.

Address Mode: Select Static if your ISP assigned you the IP address, subnet mask,

gateway, and DNS server addresses. In most cases, select **Dynamic**.

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

PPTP Subnet Enter the Primary and Secondary DNS Server Addresses (Static

Mask: PPTP only).

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

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

**Username:** Enter your PPTP username.

Password: Enter your PPTP password and then retype the password in the

next box.

**Reconnect** Select either **Always-on**, **On-Demand**, or **Manual**.

Mode:

Maximum Idle Enter a maximum idle time during which the Internet connection

Time: is maintained during inactivity. To disable this feature, enable

Auto-reconnect.

**DNS Servers:** The DNS server information will be supplied by your ISP (Internet

Service Provider).



**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1400 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port'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. You can use the **Clone Your PC's MAC Address** button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

#### 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.

Address Mode: Select Static if your ISP assigned you the IP address, subnet mask,

gateway, and DNS server addresses. In most cases, select **Dynamic**.

**L2TP IP Address:** Enter the L2TP IP address supplied by your ISP (Static only).

**L2TP Subnet** Enter the Subnet Mask supplied by your ISP (Static only).

Mask:

L2TP Gateway: Enter the Gateway IP Address provided by your ISP.

**L2TP Server IP:** Enter the Server IP provided by your ISP (optional).

Username: Enter your L2TP username.

Password: Enter your L2TP password and then retype the password in the

next box.

**Reconnect Mode:** Select either **Always-on**, **On-Demand**, or **Manual**.

**Maximum Idle** Enter a maximum idle time during which the Internet connection

Time: is maintained during inactivity. To disable this feature, enable

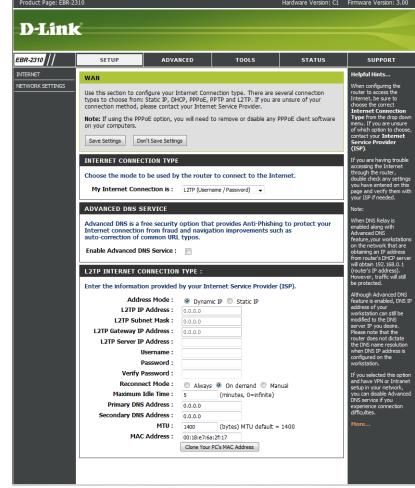
Auto-reconnect.

DNS Servers: Enter the Primary and Secondary DNS Server Addresses (Static

L2TP only).

MTU: Maximum Transmission Unit - you may need to change the MTU for

optimal performance with your specific ISP. 1400 is the default MTU.



Clone MAC The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended Address: that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

## **Network Settings**

This section will allow you to change the local network settings of the router and to configure the DHCP settings.

**IP Address:** Enter the IP address of the router. The default IP address is 192.168.0.1.

If you change the IP address, once you click Apply, you will need to enter the new IP address in your browser to get back into the configuration utility.

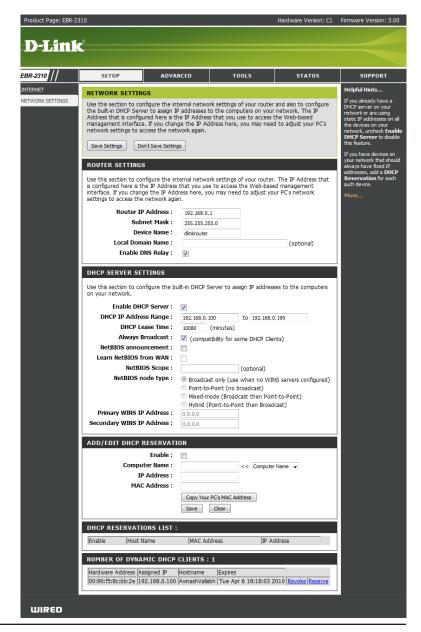
**Subnet Mask:** Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

**Local Domain:** Enter the Domain name (Optional).

**Enable DNS Relay:** Uncheck the box to transfer the DNS server information from your

ISP to your computers. If checked, your computers will use the

router for a DNS server.



### **DHCP Server Settings**

DHCP stands for Dynamic Host Control Protocol. The EBR-2310 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 EBR-2310. 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.

**Enable DHCP** Check this box to enable the DHCP server on your **Server:** router. Uncheck to disable this function.

**DHCP IP Address** Enter the starting and ending IP addresses for the

Range: DHCP server's IP assignment.

**Note:** If you statically (manually) assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.

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

the Lease time in minutes.

DHCP SERVER SETTINGS	
Use this section to configure the buon your network.	uilt-in DHCP Server to assign IP addresses to the computers
Enable DHCP Server :	<b>v</b>
DHCP IP Address Range:	192.168.0.100 to 192.168.0.199
DHCP Lease Time :	10080 (minutes)
Always Broadcast:	(compatibility for some DHCP Clients)
NetBIOS announcement:	
Learn NetBIOS from WAN:	
NetBIOS Scope :	(optional)
NetBIOS node type:	Broadcast only (use when no WINS servers configured)
	Point-to-Point (no broadcast)
	<ul> <li>Mixed-mode (Broadcast then Point-to-Point)</li> </ul>
	<ul> <li>Hybrid (Point-to-Point then Broadcast)</li> </ul>
Primary WINS IP Address:	0.0.0.0
Secondary WINS IP Address:	0.0.0.0

### **Virtual Server**

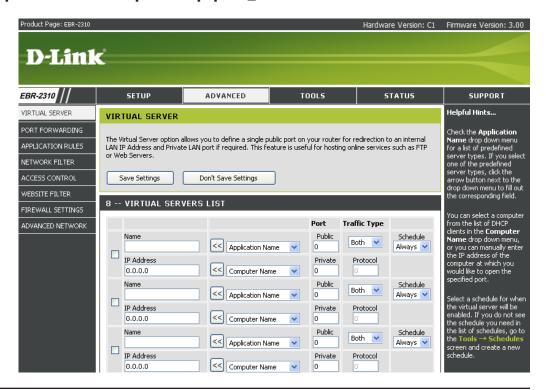
The EBR-2310 can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The EBR-2310 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the EBR-2310 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 EBR-2310 redirects the external service request to the appropriate server within the LAN network.

The EBR-2310 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 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.

For a list of ports for common applications, please visit <a href="http://support.dlink.com/fag/view.asp?prod\_id=1191">http://support.dlink.com/fag/view.asp?prod\_id=1191</a>.



This will allow you to open a single port. If you would like to open a range of ports, refer to page 30.

**Name:** Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), you computer will be listed in the "Computer Name" drop-down menu. Select your computer and click <<.

Private Port/ Enter the port that you want to open next to Private Port and Public Port.
 Public Port: The private and public ports are usually the same. The public port is the port seen from the Internet side, and the private port is the port being used by the application on the computer within your local network.

**Traffic Type:** Select **TCP**, **UDP**, or **Both** from the drop-down menu.

**Schedule:** The schedule of time when the Virtual Server Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools** > **Schedules** section.



## **Port Forwarding**

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

**Name:** Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), you computer will be listed in the "Computer Name" drop-down menu. Select your computer and click <<.

**TCP/UDP:** Enter the TCP and/or UDP port or ports that you want to open. You can enter a single port or a range of ports.

Example: 24,1009,3000-4000

**Schedule:** The schedule of time when the Virtual Server Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools** > **Schedules** section.



## **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 EBR-2310. 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 firewall (public) ports associated with the trigger port to open them for inbound traffic.

The EBR-2310 provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

Name: Enter a name for the rule. You may select a pre-defined application from the drop-down menu and click <<.

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

**Traffic Type:** Select the protocol of the trigger port (TCP, UDP, or Both).

**Firewall:** This is the port number on the Internet 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 the protocol of the firewall port (TCP, UDP, or Both).

**Schedule:** The schedule of time when the Application Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools** > **Schedules** section.



## **QoS Engine**

The QoS Engine option helps improve your network gaming performance by prioritizing applications. By default the QoS Engine settings are disabled and application priority is not classified automatically.

**Enable QoS** This option is disabled by default. Enable this **Engine:** option for better performance and experience with online games and other interactive applications, such as VoIP.

Automatic This option is enabled by default when the QoS Uplink Speed: Engine option is enabled. This option will allow your router to automatically determine the uplink speed of your Internet connection.

**Measured Uplink** This displays the detected uplink speed. **Speed:** 

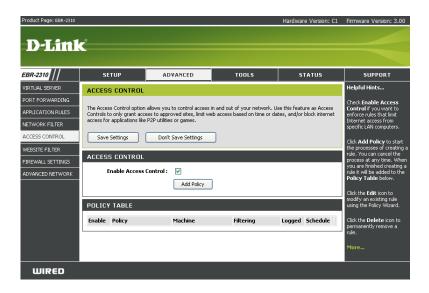
Manual Uplink The speed at which data can be transferred from Speed: the router to your ISP. This is determined by your ISP. ISP's offer speed as a download/upload pair. For example, 1.5Mbits/284Kbits. Using this example, you would enter 284. Alternatively you can test your uplink speed with a service such as www.dslreports.com.



#### **Access Control**

The Access Control section allows you to control access in and out of your network. Use this feature as Parental Controls to only grant access to approved sites, limit web access based on time or dates, and/or block access from applications like P2P utilities or games.

Add Policy: Click the Add Policy button to start the Access Control Wizard.



#### **Access Control Wizard**

Click **Next** to continue with the wizard.



Enter a name for the policy and then click **Next** to continue.

Select a schedule (I.E. Always) from the drop-down menu and then click **Next** to continue.

Enter the following information and then click **Next** to continue.

- Address Type Select IP address, MAC address, or Other Machines.
- IP Address Enter the IP address of the computer you want to apply the rule to.



Select the filtering method and then click **Next** to continue.

#### Enter the rule:

Enable - Check to enable the rule.

Name - Enter a name for your rule.

Dest IP Start - Enter the starting IP address.

Dest IP End - Enter the ending IP address.

Protocol - Select the protocol.

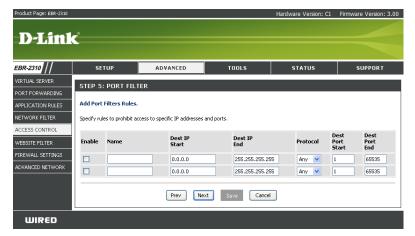
Dest Port Start - Enter the starting port number.

Dest Port End - Enter the ending port number.

To enable web logging, click Enable.

Click **Save** to save the access control rule.





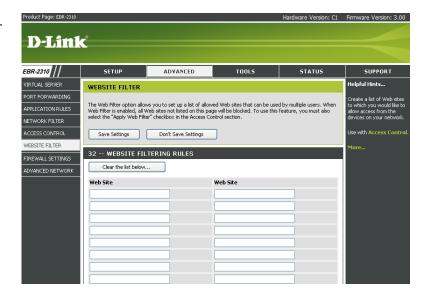


#### **Website Filters**

Website Filters 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, click **Clear the List Below**.

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

**Note:** https sites are not supported.



#### **Inbound Filter**

The Inbound Filter option is an advanced method of controlling data received from the Internet. With this feature you can configure inbound data filtering rules that control data based on an IP address range. Inbound Filters can be used with Virtual Server, Port Forwarding, or Remote Administration features.

Name: Enter a name for the inbound filter rule.

Action: Select Allow or Deny.

**Enable:** Check to enable rule.

Source IP Start: Enter the starting IP address. Enter 0.0.0.0 if you

do not want to specify an IP range.

Source IP End: Enter the ending IP address. Enter 255.255.255.255

if you do not want to specify and IP range.

Save: Click the Save button to apply your settings. You

must click Save Settings at the top to save the

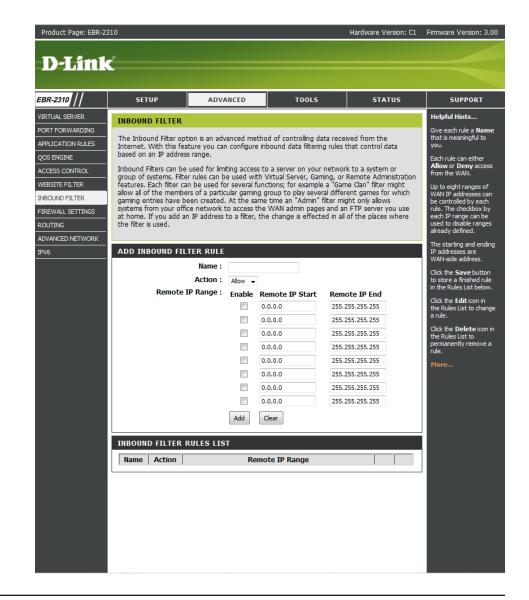
settings.

**Inbound Filter** This section will list any rules that are created. You

Rules List: may click the Edit icon to change the settings or

enable/disable the rule, or click the Delete icon

to remove the rule.



## **Firewall Settings**

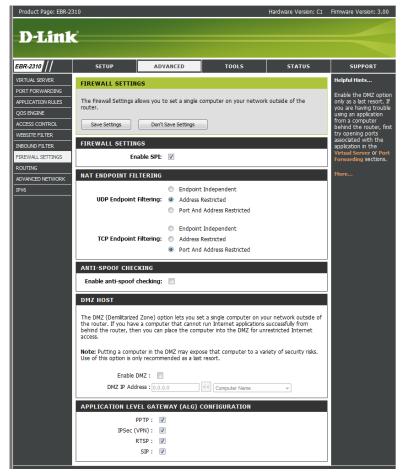
A firewall protects your network from the outside world. The D-Link EBR-2310 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you cam enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

**Enable SPI:** SPI (Stateful Packet Inspection, also known as dynamic packet filtering) helps to prevent cyber attacks by tracking more state per session. It validates that the traffic passing through the session conforms to the protocol.

**Enable DMZ** If an application has trouble working from behind the router, you can **Host:** expose one computer to the Internet and run the application on that computer.

**Note:** Placing 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.

**DMZ IP Address:** Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication.



## **Application Level Gateway (ALG) Configuration**

Here you can enable or disable ALG's. Some protocols and applications require special handling of the IP payload to make them work with network address translation (NAT). Each ALG provides special handling for a specific protocol or application. A number of ALGs for common applications are enabled by default.

**PPTP:** Allows multiple machines on the LAN to connect to their corporate network using PPTP protocol.

**IPSEC (VPN):** Allows multiple VPN clients to connect to their corporate network using IPSec. Some VPN clients support traversal of IPSec through NAT. This ALG may interfere with the operation of such VPN clients. If you are having trouble connecting with your corporate network, try turning this ALG off. Please check with the system administrator of your corporate network whether your VPN client supports NAT traversal.

**RTSP:** Allows applications that use Real Time Streaming Protocol to receive streaming media from the internet. QuickTime and Real Player are some of the common applications using this protocol.

**SIP:** Allows devices and applications using VoIP (Voice over IP) to communicate across NAT. Some VoIP applications and devices have the ability to discover NAT devices and work around them. This ALG may interfere with the operation of such devices. If you are having trouble making VoIP calls, try turning this ALG off.

## Routing

The Routing option is an advanced method of customizing specific routes of data through your network.

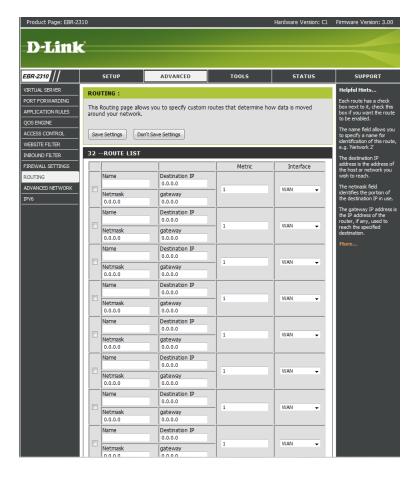
**Destination IP:** Enter the IP address of packets that will take this route.

**Netmask:** Enter the netmask of the route, please note that the octets must match your destination IP address.

Gateway: Enter your next hop gateway to be taken if this route is used.

**Metric:** The route metric is a value from 1 to 16 that indicates the cost of using this route. A value 1 is the lowest cost and 15 is the highest cost.

**Interface:** Select the interface that the IP packet must use to transit out of the router when this route is used.



## **Advanced Network Settings**

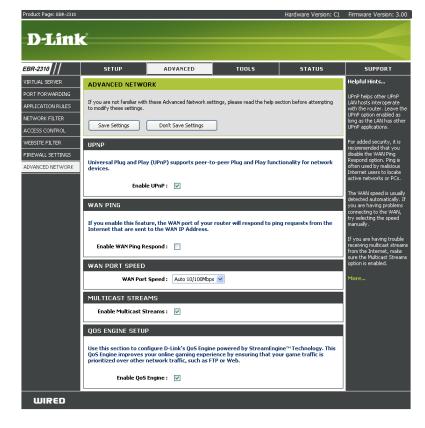
**UPnP Settings:** To use the Universal Plug and Play (UPnP<sup>™</sup>) feature click on **Enabled**. UPNP provides compatibility with networking equipment, software and peripherals.

**WAN Ping:** Unchecking the box will not allow the EBR-2310 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the Internet port to be "pinged".

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

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

**Enable QOS** Check the box to enable QOS Engine. **Engine:** 



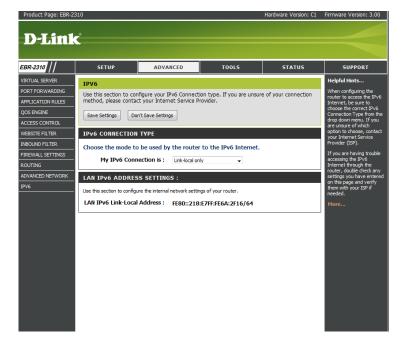
### IPv6

#### **Link-Local Connectivity**

My IPv6 Connection: Select Link-Local Only from the drop-down

menu.

**LAN IPv6 Address** Displays the IPv6 address of the router. **Settings:** 



## Static IPv6 (Stateful)

M - ID C C				
My IPV6 Connection:	Select <b>Static IPv6</b> from the drop-down menu.	IPv6 CONNECTION TYPE		
	Enter the address settings supplied by your Internet provider (ISP).	Choose the mode to be used by	y the router to the IPv6 Internet.	
_	·	My IPv6 Connection is :	Static IPv6 ▼	
LAN IPv6 Address:	Enter the LAN (local) IPv6 address for the router.	WAN IPv6 ADDRESS SETTIN	GS:	
LAN Link-Local Address:	Displays the Router's LAN Link-Local Address.	Enter the IPv6 address informa	tion provided by your Internet Service	Provider (ISP).
		IPv6 Address :		
	Check to enable the Autoconfiguration feature.	Subnet Prefix Length :		
Autoconfiguration:		Defautl Gateway :		
Autoconfiguration	Select Stateful (DHCPv6) or Stateless. Refer	Primary DNS Address :		
	to the next page for Stateless.	Secondary DNS Address :		
		LAN IPv6 ADDRESS SETTING	GS:	
	Enter the start IPv6 Address for the DHCPv6 range for your local computers.	Use this section to configure the internal here, you may need to adjust your PC's	al network setings of your router. If you change the network settings to access the network again.	: LAN IPv6 Address
		LAN IPv6 Address :	/64	
IPv6 Address Range	Enter the end IPv6 Address for the DHCPv6	LAN IPv6 Link-Local Address :	FE80::240:F4FF:FE03:1A9C/64	
	range for your local computers.	ADDRESS AUTOCONFIGURAT	TION SETTINGS	
		Use this section to setup IPv6 Autoconfi	guration to assign IP addresses to the computers o	n your network.
	Enter the IPv6 Address Lifetime (in minutes).	Enable Autoconfiguration :		
Lifetime:		Autoconfiguration Type :	Stateful (DHCPv6) ▼	
		IPv6 Address Range(Start):	:	/64
		IPv6 Address Range(End):		/64

D-Link EBR-2310 User Manual

IPv6 Address Lifetime: 30

(minutes)

#### **Static IPv6 (Stateless)**

My IPv6 Connection: Select Static IPv6 from the drop-down menu. IPv6 CONNECTION TYPE WAN IPv6 Address Enter the address settings supplied by your Choose the mode to be used by the router to the IPv6 Internet. **Settings:** Internet provider (ISP). My IPv6 Connection is : Static IPv6 LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router. WAN IPv6 ADDRESS SETTINGS : **LAN Link-Local** Displays the Router's LAN Link-Local Address. Enter the IPv6 address information provided by your Internet Service Provider (ISP). Address: IPv6 Address: **Enable** Check to enable the Autoconfiguration feature. Subnet Prefix Length: **Autoconfiguration:** Defautl Gateway: Primary DNS Address: Autoconfiguration Select Stateless. Refer to the previous page Secondary DNS Address: **Type:** for Stateful. LAN IPv6 ADDRESS SETTINGS : Router Enter the Router Advertisement Lifetime (in Advertisement minutes). Use this section to configure the internal network setings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again. Lifetime: LAN IPv6 Address: /64 LAN IPv6 Link-Local Address: FE80::240:F4FF:FE03:1A9C/64 ADDRESS AUTOCONFIGURATION SETTINGS Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. Enable Autoconfiguration: Autoconfiguration Type : Stateless

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Router Advertisement

Lifetime:

(minutes)

#### **DHCPv6** (Stateful)

My IPv6 Connection: Select DHCPv6 from the drop-down menu. IPv6 CONNECTION TYPE Choose the mode to be used by the router to the IPv6 Internet. IPv6 DNS Settings: Select either Obtain DNS server address automatically or Use the following DNS My IPv6 Connection is: DHCPv6 Address. IPv6 DNS SETTINGS: **Primary/Secondary** Enter the primary and secondary DNS server Obtain DNS server address automatically or enter a specific DNS server address. DNS Address: addresses. Obtain DNS server address automatically Use the following DNS address LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router. Primary DNS Address: Secondary DNS Address: **LAN Link-Local** Displays the Router's LAN Link-Local Address. **Address:** LAN IPv6 ADDRESS SETTINGS: **Enable** Check to enable the Autoconfiguration feature. Use this section to configure the internal network setings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again. **Autoconfiguration:** LAN IPv6 Address: /64 LAN IPv6 Link-Local Address: FE80::240:F4FF:FE03:1A9C/64 Autoconfiguration Select Stateful (DHCPv6) or Stateless. Refer to Type: the next page for Stateless. ADDRESS AUTOCONFIGURATION SETTINGS Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. IPv6 Address Range Enter the start IPv6 Address for the DHCPv6 Enable Autoconfiguration: **Start:** range for your local computers. Autoconfiguration Type: Stateful (DHCPv6) + IPv6 Address Range(Start): IPv6 Address Range(End): IPv6 Address Range Enter the end IPv6 Address for the DHCPv6 range IPv6 Address Lifetime: (minutes)

**IPv6 Address** Enter the IPv6 Address Lifetime (in minutes). **Lifetime:** 

**End:** for your local computers.

## **DHCPv6** (Stateless)

Mul IDuc Compostions	C. L. (DUCD CC. )			
My IPV6 Connection:	Select <b>DHCPv6</b> from the drop-down menu.	IPv6 CONNECTION TYPE		
IPv6 DNS Settings:	Select either Obtain DNS server address automatically or Use the following DNS Address.	Choose the mode to be used by My IPv6 Connection is:	y the router to the IPv6 Interne	et.
		IPv6 DNS SETTINGS:		
Primary/Secondary DNS Address:	Enter the primary and secondary DNS server addresses.	Obtain DNS server address auto		
LAN IPv6 Address:	Enter the LAN (local) IPv6 address for the router.	Primary DNS Address :	Obtain DNS server address automa Use the following DNS address	atically
LAN Link-Local Address:	Displays the Router's LAN Link-Local Address.	Secondary DNS Address :		
		LAN IPV6 ADDRESS SETTING	is:	
Enable Autoconfiguration:	Check to enable the Autoconfiguration feature.	Use this section to configure the internal here, you may need to adjust your PC's		
_		LAN IPv6 Address:	1	64
•	Select <b>Stateless</b> . Refer to the previous page for Stateful.	LAN IPv6 Link-Local Address :	FE80::240:F4FF:FE03:1A9C/64	•
		ADDRESS AUTOCONFIGURAT	ION SETTINGS	
	Enter the Router Advertisement Lifetime (in minutes).	Use this section to setup IPv6 Autoconfig	-	omputers on your network.

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Enable Autoconfiguration : Autoconfiguration Type :

Router Advertisement

Lifetime:

Stateless

(minutes)

30

#### IPv6 over PPPoE (Stateful)

My IPv6 Connection: Select PPPoE from the drop-down menu.

**PPPoE:** Enter the PPPoE account settings supplied by your Internet

provider (ISP).

Address Mode: Select Static if your ISP assigned you the IP address, subnet

mask, gateway, and DNS server addresses. In most cases, select

Dynamic.

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

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).

Reconnection Mode: Select either Always-on, On-Demand, or Manual.

**Maximum Idle Time:** Enter a maximum idle time during which the Internet connection

is maintained during inactivity. To disable this feature, enable

Auto-reconnect.

IPv6 DNS Settings: Select either Obtain DNS server address automatically or Use

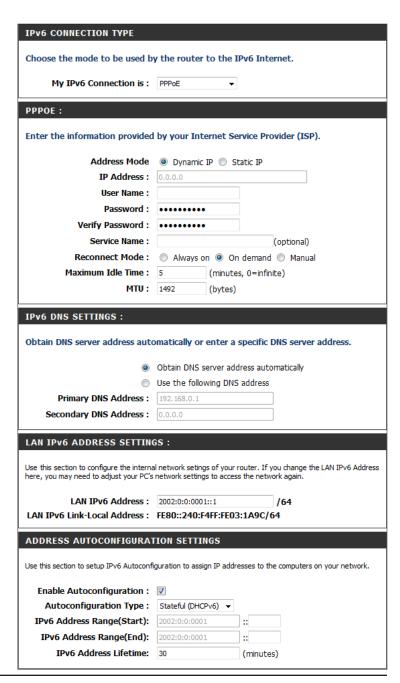
the following DNS Address.

**Primary/Secondary DNS** Enter the primary and secondary DNS server addresses.

Address:

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.



**Enable** Check to enable the Autoconfiguration feature.

**Autoconfiguration:** 

Autoconfiguration Type: Select Stateful (DHCPv6) or Stateless. Refer to the next page for Stateless.

**IPv6 Address Range Start:** Enter the start IPv6 Address for the DHCPv6 range for your local computers.

**IPv6 Address Range End:** Enter the end IPv6 Address for the DHCPv6 range for your local computers.

IPv6 Address Lifetime: Enter the IPv6 Address Lifetime (in minutes).

#### IPv6 over PPPoE (Stateless)

**My IPv6 Connection:** Select **PPPoE** from the drop-down menu.

**PPPoE:** Enter the PPPoE account settings supplied by your Internet

provider (ISP).

Address Mode: Select Static if your ISP assigned you the IP address, subnet

mask, gateway, and DNS server addresses. In most cases, select

Dynamic.

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

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).

Reconnection Mode: Select either Always-on, On-Demand, or Manual.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection

is maintained during inactivity. To disable this feature, enable

Auto-reconnect.

IPv6 DNS Settings: Select either Obtain DNS server address automatically or Use

the following DNS Address.

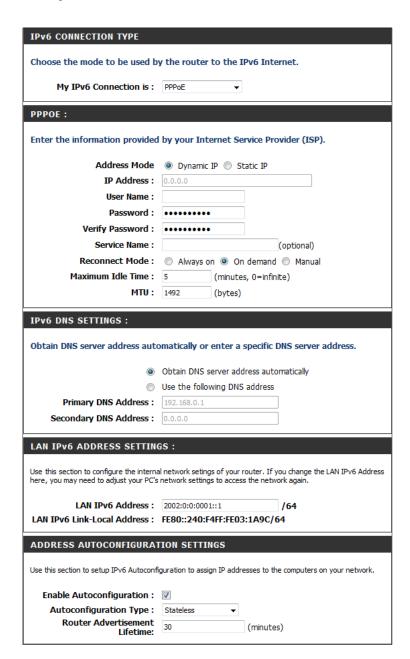
**Primary/Secondary** Enter the primary and secondary DNS server addresses.

**DNS Address:** 

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Displays the Router's LAN Link-Local Address.

Address:



**Enable** Check to enable the Autoconfiguration feature.

**Autoconfiguration:** 

Autoconfiguration Type: Select Stateful (DHCPv6) or Stateless.

**Router Advertisement** Enter the Router Advertisement Lifetime (in minutes).

Lifetime:

#### 6 to 4 Tunneling (Stateful)

**My IPv6 Connection:** Select **6 to 4** from the drop-down menu.

**6 to 4 Settings:** Enter the IPv6 settings supplied by your Internet

provider (ISP).

Primary/Secondary Enter the primary and secondary DNS server

**DNS Address:** addresses.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Displays the Router's LAN Link-Local Address.

Address:

**Enable** Check to enable the Autoconfiguration feature.

**Autoconfiguration:** 

Autoconfiguration Select Stateful (DHCPv6) or Stateless. Refer to

**Type:** the next page for Stateless.

IPv6 Address Range Enter the start IPv6 Address for the DHCPv6

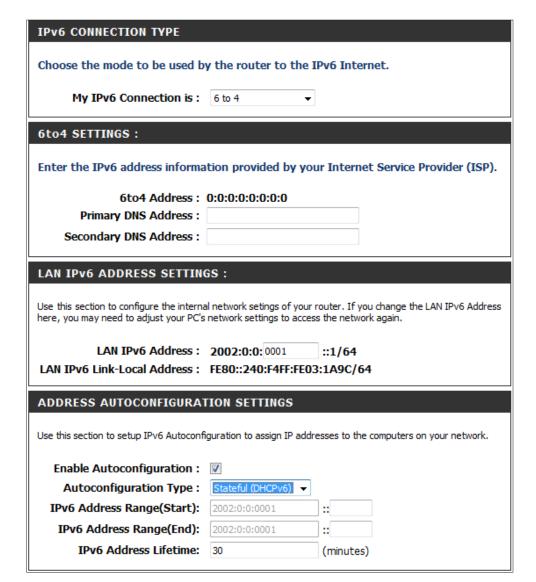
**Start:** range for your local computers.

IPv6 Address Range Enter the end IPv6 Address for the DHCPv6 range

End: for your local computers.

**IPv6 Address** Enter the IPv6 Address Lifetime (in minutes).

Lifetime:



#### 6 to 4 Tunneling (Stateless)

**My IPv6 Connection:** Select **6 to 4** from the drop-down menu.

**6 to 4 Settings:** Enter the IPv6 settings supplied by your Internet

provider (ISP).

**Primary/Secondary** Enter the primary and secondary DNS server

**DNS Address:** addresses.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

**LAN Link-Local** Displays the Router's LAN Link-Local Address.

Address:

**Enable** Check to enable the Autoconfiguration feature.

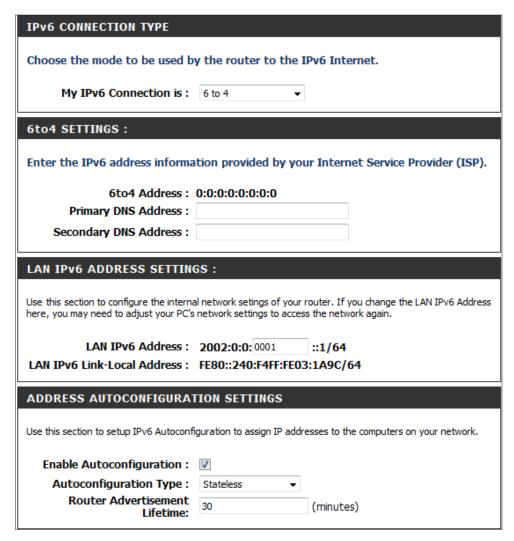
Autoconfiguration:

**Autoconfiguration** Select **Stateless**. Refer to the previous page for

**Type:** Stateful.

Router Advertisement Enter the Router Advertisement Lifetime (in

Lifetime: minutes).



# IPv6 in IPv4 Tunneling (Stateful)

ly IPv6 Connection:	Select <b>IPv6 in IPv4 Tunnel</b> from the drop-down menu.	IPv6 CONNECTION TYPE		
		Choose the mode to be used by	y the router to the IPv6 Internet	t.
	Enter the settings supplied by your Internet provider (ISP).	My IPv6 Connection is :	IPv6 in IPv4 Tunnel ▼	
		IPv6 in IPv4 TUNNEL SETTIN	IGS:	
LAN IPv6 Address:	Enter the LAN (local) IPv6 address for the router.		nformation provided by your Tun	nnel Broker.
LAN Link-Local Address:	Displays the Router's LAN Link-Local Address.	Remote IPv4 Address :		
		Remote IPv6 Address :		
		Local IPv4 Address :		
Autoconfiguration:	Check to enable the Autoconfiguration feature.	Local IPv6 Address :		
Autocomiguration.		Primary DNS Address :		
•	Select <b>Stateless</b> . Refer to the previous page for Stateful.	Secondary DNS Address :		
.,,,,		LAN IPv6 ADDRESS SETTING	GS:	
Router Advertisement Lifetime:	Enter the Router Advertisement Lifetime (in minutes).		al network setings of your router. If you ch network settings to access the network a	
		LAN IPv6 Address :	/64	4
		LAN IPv6 Link-Local Address :	FE80::240:F4FF:FE03:1A9C/64	
		ADDRESS AUTOCONFIGURAT	TION SETTINGS	
		ADDRESS AUTOCOM IGORAT	TON SETTINGS	
		Use this section to setup IPv6 Autoconfi	guration to assign IP addresses to the con	mputers on your network.
		Enable Autoconfiguration :	<b>▽</b>	
		Autoconfiguration Type :	Stateful (DHCPv6) ▼	
		IPv6 Address Range(Start):		]:
		IPv6 Address Range(End):		

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IPv6 Address Lifetime: 30

(minutes)

# IPv6 in IPv4 Tunneling (Stateless)

My IPv6 Connection:	Select <b>IPv6 in IPv4 Tunnel</b> from the drop-down menu.	IPv6 CONNECTION
	Enter the settings supplied by your Internet provider (ISP).	Choose the mode to
LAN IPv6 Address:	Enter the LAN (local) IPv6 address for the router.	IPv6 in IPv4 TUNN Enter the IPv6 in IPv
LAN Link-Local Address:	Displays the Router's LAN Link-Local Address.	Remote IPv4
Enable Autoconfiguration:	Check to enable the Autoconfiguration feature.	Local IPv4 / Local IPv6 / Primary DNS /
	Select <b>Stateful (DHCPv6)</b> or <b>Stateless</b> . Refer to the next page for Stateless.	Secondary DNS
	Enter the start IPv6 Address for the DHCPv6 range for your local computers.	Use this section to configu here, you may need to adj
	Enter the end IPv6 Address for the DHCPv6 range for your local computers.	LAN IPv6 LAN IPv6 Link-Local
IPv6 Address Lifetime:	Enter the IPv6 Address Lifetime (in minutes).	ADDRESS AUTOCO

IPv6 CONNECTION TYPE	
Choose the mode to be used by	y the router to the IPv6 Internet.
My IPv6 Connection is :	IPv6 in IPv4 Tunnel ▼
IPv6 in IPv4 TUNNEL SETTIM	IGS:
Enter the IPv6 in IPv4 Tunnel in	nformation provided by your Tunnel Broker.
Remote IPv4 Address :	
Remote IPv6 Address :	
Local IPv4 Address :	
Local IPv6 Address :	
Primary DNS Address :	
Secondary DNS Address :	
LAN IPv6 ADDRESS SETTING	GS:
	al network setings of your router. If you change the LAN IPv6 Address network settings to access the network again.
LAN IPv6 Address :	/64
LAN IPv6 Link-Local Address :	FE80::240:F4FF:FE03:1A9C/64
ADDRESS AUTOCONFIGURAT	TON SETTINGS
ADDRESS AUTOCONFIGURAT	ION SETTINGS
Use this section to setup IPv6 Autoconfi	guration to assign IP addresses to the computers on your network.
Enable Autoconfiguration :	
Autoconfiguration Type :	Stateless ▼
Router Advertisement Lifetime:	30 (minutes)

## **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.

Admin Password: Enter a new password for the Administrator Login Name. 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.

**Gateway Name:** Enter a name for the EBR-2310 router.

Remote Remote management allows the EBR-2310 to be configured from the Management: Internet by a web browser. A username and password is still required to

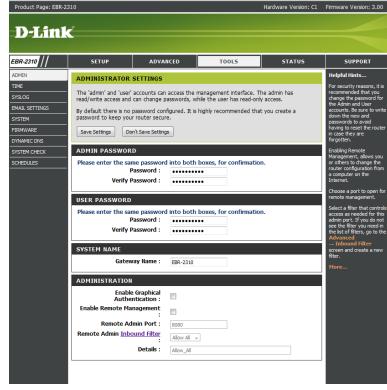
access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the

remote (Internet) host.

**Remote Admin** The port number used to access the EBR-2310.

**Port:** Example: http://x.x.x.x:8080 whereas x.x.x.x is the Internet IP address of the

EBR-2310 and 8080 is the port used for the Web Management interface.



### **Time Settings**

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 Time Server. Daylight Saving can also be configured to automatically adjust the time when needed.

**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.

**Enable NTP** NTP is short for Network Time Protocol. NTP synchronizes computer

Server: clock times in a network of computers. Check this box to use a NTP

server. This will only connect to a server on the Internet, not a local

server.

NTP Server Used: Enter the NTP server or select one from the drop-down menu.

**Manual:** To manually input the time, enter the values in these fields for the Year,

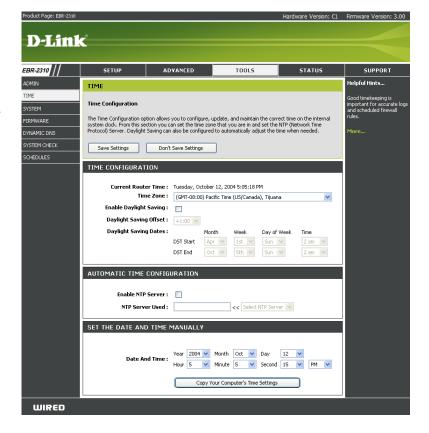
Month, Day, Hour, Minute, and Second and then click **Set Time**. You

can also click Copy Your Computer's Time Settings.

**Copy Your** Apply your computer's date and time settings.

Computer's Time

Settings:

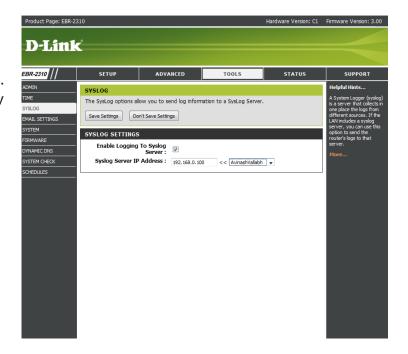


# Syslog

The Broadband Router keeps a running log of events and activities occurring on the Router. You may send these logs to a SysLog server on your network.

**Enable Logging to** Check this box to send the router logs to a SysLog Server. **SysLog Server:** 

**SysLog Server IP** The address of the SysLog server that will be used to send the logs. **Address:** You may also select your computer from the drop-down menu (only if receiving an IP address from the router via DHCP).



## **Email Settings**

The Email feature can be used to send the system log files, router alert messages, and firmware update notification to your e-mail address.

**Enable Email** When this option is enabled, router activity logs are e-mailed to a **Notification:** designated e-mail address.

From Email This e-mail address will appear as the sender when you receive a log file Address: or firmware upgrade notification via e-mail.

**To Email** Enter the e-mail address where you want the e-mail sent. **Address:** 

**SMTP Server** Enter the SMTP server address for sending e-mail. If your SMTP server **Address:** requires authentication, select this option.

**Enable** Check this box if your SMTP server requires authentication.

**Authentication:** 

**Account Name:** Enter your account for sending e-mail.

**Password:** Enter the password associated with the account.

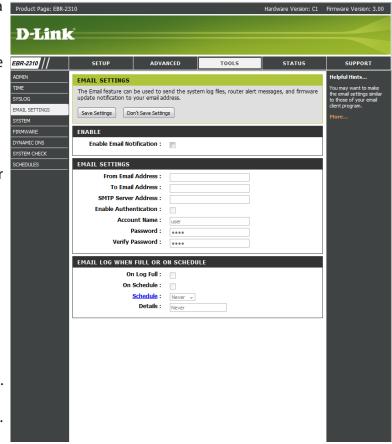
Re-type the password associated with the account.

On Log Full: When this option is selected, logs will be sent via e-mail when the log is full.

On Schedule: Selecting this option will send the logs via e-mail according to schedule.

Schedule: This option is enabled when On Schedule is selected. You can select a

schedule from the list of defined schedules. To create a schedule, go to **Tools** > **Schedules**.



### **System Settings**

**Save Settings to** Use this option to save the current router configuration settings to a **Local Hard Drive:** 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** Use this option to load previously saved router configuration settings. **from Local Hard** First, use the Browse control to find a previously save file of configuration

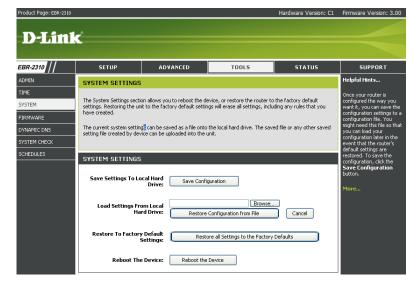
**Drive:** settings. Then, click the Load button to transfer those settings to the router.

Restore to This option will restore all configuration settings back to the settings Factory Default that were in effect at the time the router was shipped from the factory. Settings: 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.

**Reboot Device:** Click to reboot the router.



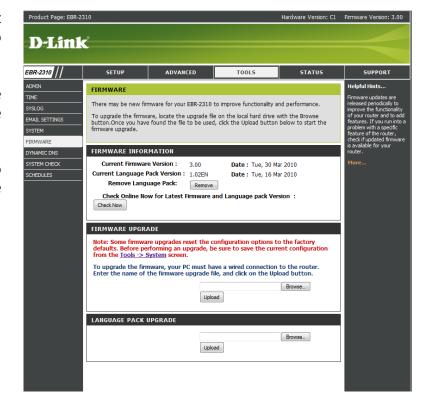
#### **Update Firmware**

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** Click on **Check Online Now for Latest Firmware Version** to find out **Upgrade:** 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** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

**Notifications** Check **Automatically Check Online for Latest Firmware Version** to **Options:** have the router check automatically to see if there is a new firmware upgrade.



#### **DDNS**

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis. com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter in your domain name to connect to your server no matter what your IP address is.

**DDNS:** Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. Check the box to enable DDNS.

**Server** Choose your DDNS provider from the drop down menu.

**Address:** 

Host Name: Enter the Host Name that you registered with your DDNS service

provider.

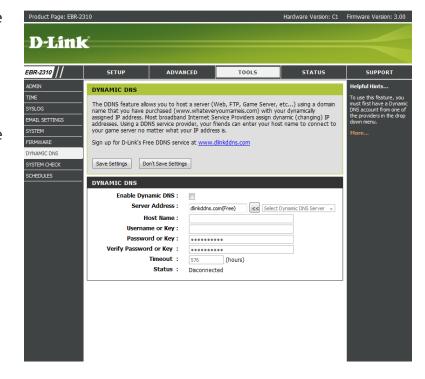
**Username or** Enter the Username for your DDNS account.

Key:

Password or Enter the Password for your DDNS account.

Key:

**Timeout:** Enter a time (in hours).



## **System Check**

**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**.

**Ping Results:** The results of your ping attempts will be displayed here.



## **Schedules**

Name: Enter a name for your new schedule.

**Days:** Select a day, a range of days, or All Week to include every day.

Time: Check All Day - 24hrs or enter a start and end time for your schedule.

**Save:** Click **Save** to save your schedule. You must click Save Settings at the top for your schedules to go into effect.

**Schedule Rules** The list of schedules will be listed here. Click the **Edit** icon to make **List:** changes or click the **Delete** icon to remove the schedule.



#### **Device Information**

This page displays the current information for the EBR-2310. It will display the LAN, WAN (Internet), and Wireless information.

If your Internet 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 Internet 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.

**General:** Displays the router's time and firmware version.

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

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

router.

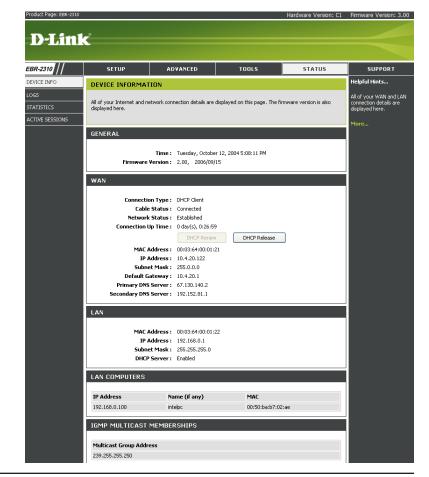
LAN Computers: Displays computers and devices that are connected to the router via

Ethernet and that are receiving an IP address assigned by the router

(DHCP).

**IGMP Multicast** Displays the Multicast Group IP Address.

Memberships:



### Log

The router automatically logs (records) events of possible interest in it's internal memory. If there isn't enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The Logs option allows you to view the router logs. You can define what types of events you want to view and the level of the events to view. This router also has external Syslog Server support so you can send the log files to a computer on your network that is running a Syslog utility.

**What to View:** You can select the types of messages that you want to display from the log. Firewall & Security, System, and Router Status messages can

be selected.

View Levels: There are three levels of message importance: Informational, Warning,

and Critical. Select the levels that you want displayed in the log.

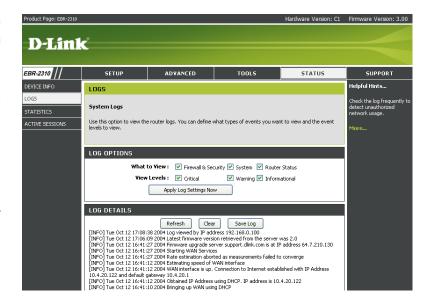
**Apply Log** Will filter the log results so that only the selected options appear.

Settings:

**Refresh:** Updates the log details on the screen so it displays any recent activity.

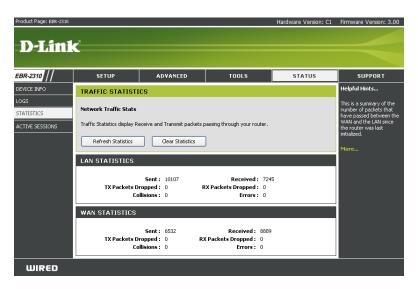
**Clear:** Clears all of the log contents.

**Save Log:** This option will save the router to a log file on your computer.



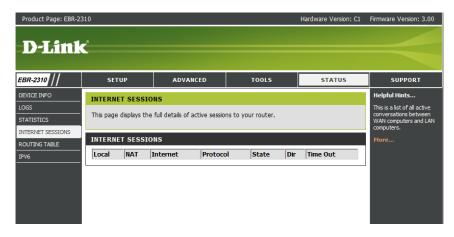
#### **Stats**

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



#### **Internet Sessions**

The screen below displays sessions currently active in the router.



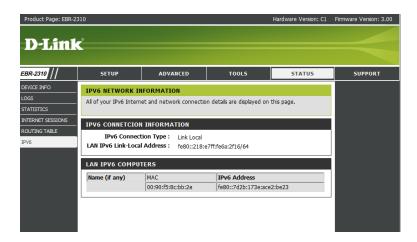
# **Routing Table**

This page displays the routing details configured for your router.

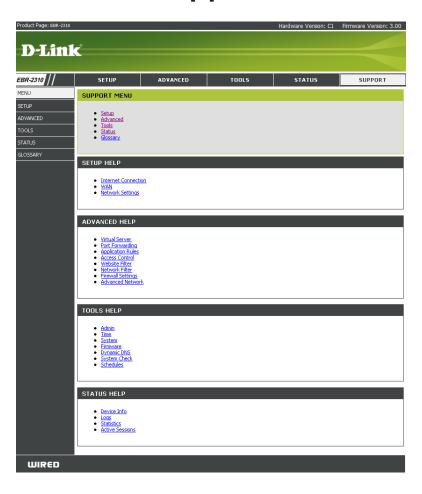


## **IPv6 Network Information**

All of your IPv6 Internet and network connection details are displayed on this page.



# **Support**



# **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
- 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.

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, lets 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 **Setup** and then click **Manual Configure**.
- To change the MTU enter the number in the MTU field and click **Save Settings** to save your settings.
- Test your e-mail. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

# Assigning a Static IP Address (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:

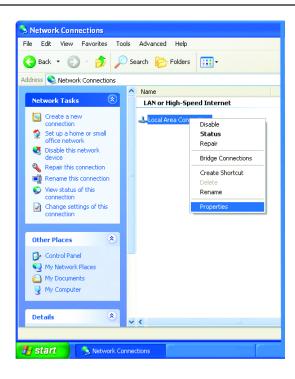
- Go to **Start**
- Click on Control Panel

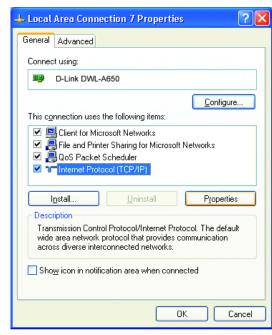
• Double-click on Network Connections



- Right-click on Local Area Connections.
- Left-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).

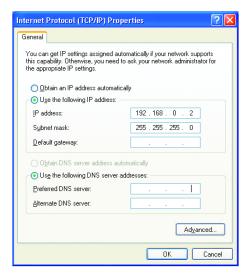




- Input your **IP address and subnet mask.** (The IP Addresses on your network must be within the same range. For example, if one computer has an IP Address of 192.168.0.2, the other computers should have IP Addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the 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 <u>Network Setup Wizard</u> on all of the computers on your network.

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

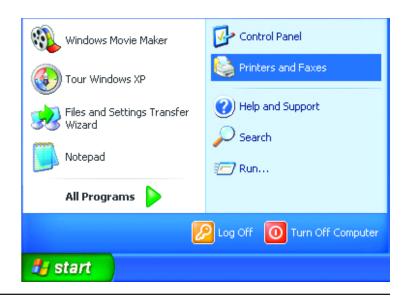
- 1. Adding a local printer
- 2. Sharing an network printer
- 3. Sharing an LPR printer

### Adding a local printer

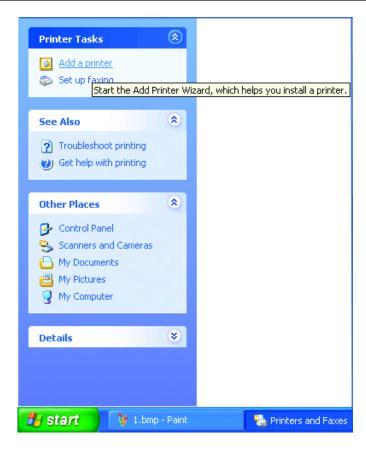
(A printer connected directly to a computer)

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

Local or Network Printer
The wizard needs to know which type of printer to set up.

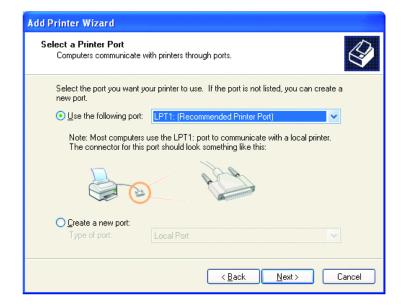
Select the option that describes the printer you want to use:

Local printer attached to this computer
Local printer attached to this computer
Local printer attached to another computer

A network printer, or a printer attached to another computer

To set up a network printer that is not attached to a print server, use the "Local printer" option.

- 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

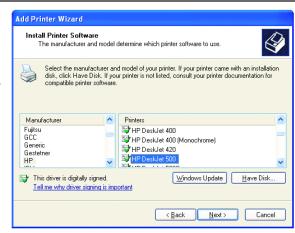


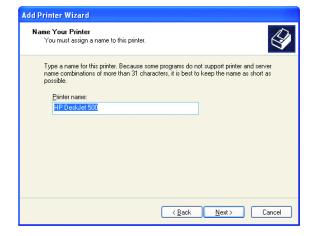
- Select and highlight the **correct driver** for your printer.
- Click Next

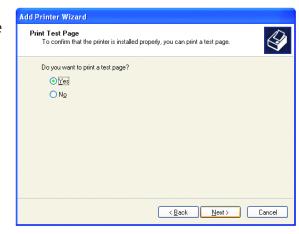
(If the correct driver is not displayed, insert the CD or floppy disk that came with your printer and click **Have Disk**).

- 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







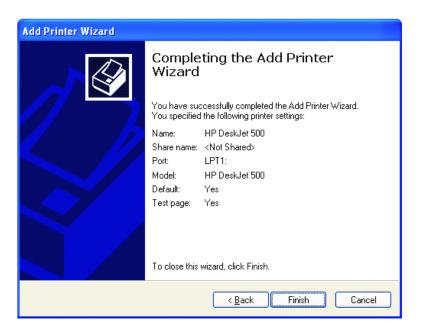
This screen gives you information about your printer.

(The printer will begin to print a test page)

Click Finish

When the test page has printed,

Click **OK** 

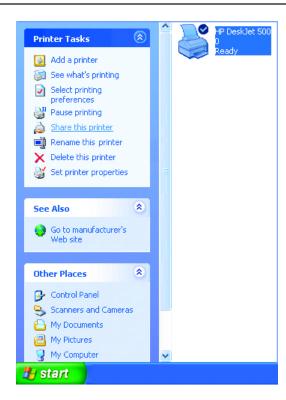




#### • Go to Start> Printers and Faxes

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

You have successfully added a local printer.



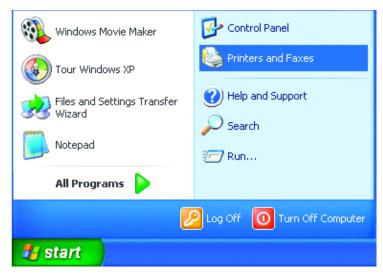
### **Sharing a Network Printer**

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





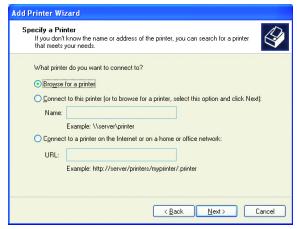


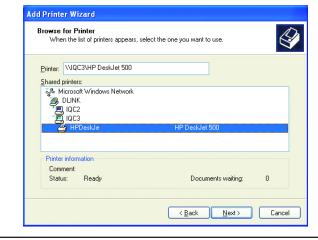
- Select Network Printer
- Click Next

- Select Browse for a printer
- Click Next

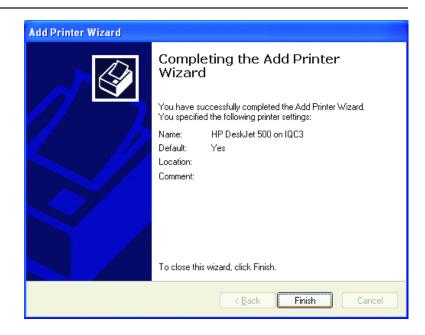
- Select the **printer** you would like to share.
- Click Next







Click Finish



To check for proper installation:

• Go to Start > Printers and Faxes



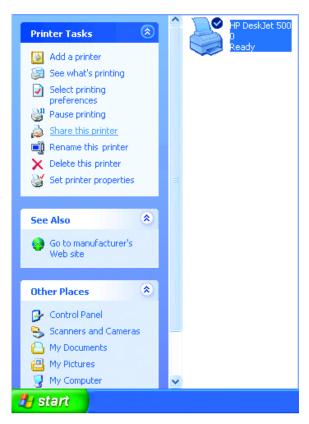
*The printer icon will appear at right, indicating proper installation.* 

#### 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

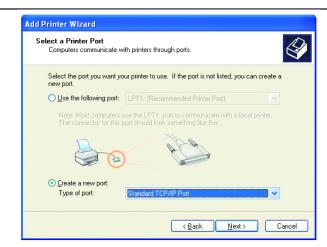




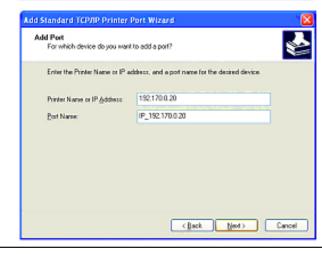
- Select Create a new port
- From the pull-down menu, select **Standard TCP/IP Port**, as shown.
- Click Next

- Please read the instructions on this screen.
- Click Next

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

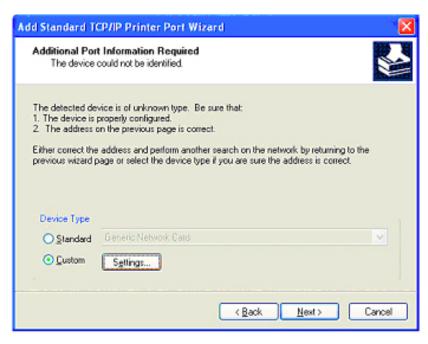


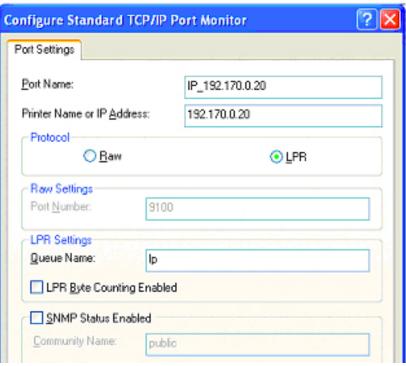




- In this screen, select Custom.
- Click Settings

- 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**



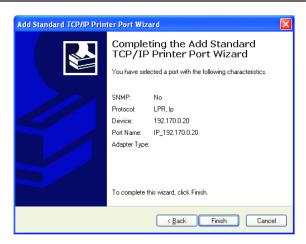


- This screen will show you information about your printer.
- Click Finish

- 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

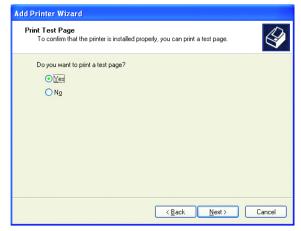
- Select **Yes**, to print a test page.
- Click Next

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.

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 Vista\* - Click on Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections.

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

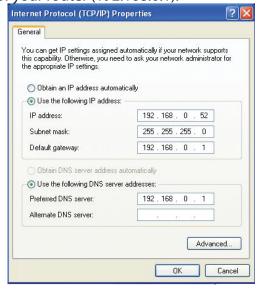
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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

#### **LEDS**

- Power
- Internet
- 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, 1.0A

#### **Safety & Emissions**

- FCC
- CE

#### **Dimensions**

- L = 5.6in (142mm)
- W = 4.3in (109mm)
- H = 1.2in (31mm)

#### Weight

0.44 lbs (200g)

#### Warranty

1-Year

## **Contacting Technical Support**

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 C1))
- 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

#### **Internet Support:**

http://support.dlink.com

#### For customers within Canada:

#### **Phone Support:**

(800) 361-5265

#### **Internet Support:**

http://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 replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

#### **Limited Software Warranty:**

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink 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 (USA):**

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 DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-354-6555, 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. DLink 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.

#### **Submitting A Claim (Canada):**

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:

- Customers need to provide their receipt (proof of purchase) even if the product is registered. Without a receipt, no warranty service will be done. The registration is not considered a proof of purchase.
- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-800-361-5265, 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.ca/.
- 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 be rejected by D-Link. Products shall be fully insured by the customer and shipped to D-Link Networks, Inc., 2525 Meadowvale Boulevard Mississauga, Ontario, L5N 5S2 Canada. 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 Purolator Canada or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, 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.
- RMA phone number: 1-800-361-5265 Hours of Operation: Monday-Friday, 9:00AM 9:00PM EST

#### What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

#### **Disclaimer of Other Warranties:**

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

#### **Limitation of Liability:**

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

#### **Governing Law:**

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

#### **Trademarks:**

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#### **Copyright Statement:**

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#### **CE Mark Warning:**

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

#### **FCC Statement:**

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

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

#### **FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only.

#### **IMPORTANT NOTICE:**

**FCC Radiation Exposure Statement:** 

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

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

#### **Industry Canada Statement:**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **IMPORTANT NOTE:**

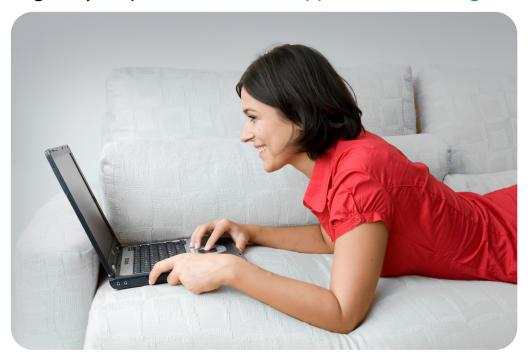
**Radiation Exposure Statement:** 

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This device has been designed to operate with an antenna having a maximum gain of 2 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

## Registration

Register your product online at support.dlink.com/register



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

Version 3.0 June 17, 2010