

USER MANUAL

WBR-2310

VERSION 2.1



Table of Contents

Product Overview	4	Virtual Server	28
Package Contents.....	4	Port Forwarding	30
System Requirements	4	Application Rules	31
Introduction.....	5	Network Filters.....	32
Features.....	6	Website Filters	33
Hardware Overview	7	Firewall Settings.....	34
Connections.....	7	DMZ Host	34
LEDs	8	VPN Passthrough.....	34
Installation.....	9	Advanced Wireless Settings	35
Before you Begin	9	Tx Rate.....	35
Wireless Installation Considerations.....	10	Preamble	35
Connect to Cable/DSL/Satellite Modem	11	WMM Mode.....	35
Connect to Another Router.....	12	Advanced Network Settings.....	36
Configuration	14	Administrator Settings.....	37
Web-based Configuration Utility	14	Time Settings.....	38
Setup Wizard	15	System Settings.....	39
Internet Setup	19	Update Firmware	40
Dynamic (Cable).....	19	DDNS.....	41
PPPoE (DSL)	20	System Test	42
PPTP	21	Schedules	43
L2TP.....	22	Log Settings.....	44
Big Pond.....	23	Device Information	45
Static (assigned by ISP).....	24	Log.....	46
Wireless Settings	25	Stats.....	47
Network Settings.....	26	Wireless	47
DHCP Server Settings	27	Support	48

Wireless Security.....	49
What is WEP?	49
What is WPA?	50
Configure WEP	51
Configure WPA-PSK	52
Configure WPA (RADIUS).....	53
Connect to a Wireless Network	54
Using Windows Vista®	54
Configure Wireless Security.....	55
Using Windows® XP	57
Configure WEP	58
Configure WPA-PSK	60
Troubleshooting.....	62
Wireless Basics	66
What is Wireless?	67
Tips	69
Wireless Modes	70
Networking Basics	71
Check your IP address	71
Statically Assign an IP address	72
Technical Specifications.....	73
Contacting Technical Support.....	75
Warranty	76
Registration.....	81

Package Contents

- D-Link WBR-2310 RangeBooster G™ Router
- Power Adapter
- Ethernet Cable
- Manual and Warranty on CD

Note: Using a power supply with a different voltage rating than the one included with the WBR-2310 will cause damage and void the warranty for this product.



System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0, Mozilla 1.7.12 (5.0), or Firefox 1.5 and above (for configuration)

Introduction

The D-Link RangeBooster G™ WBR-2310 with enhanced 108 features the industry's first default 108Mbps* "Dynamic Mode" that allows clients to always operate at the highest possible speeds while automatically identifying and recognizing other D-Link RangeBooster G™ products for highest performance capability and seamless access to the wireless network in a homogenous environment.

Extensive performance and interoperability testing using standard based methods reveals a significant increase in performance of the WBR-2310 over other 802.11g based competitors.

The D-Link WBR-2310 wireless router employs five cutting-edge hardware-based compression technologies to achieve a significant boost in performance within the 2.4GHz frequency range.

The WBR-2310 features robust security to protect the wireless network from intruders, complying with the latest wireless networking security protocols, including WEP encryption and Wi-Fi Protected Access (WPA) support for both 802.1x and WPA-PSK. The WBR-2310 is also capable of supporting the government-grade AES encryption and upcoming 802.11i standards.

In addition to being the industry's fastest wireless network solution, It includes management settings and policy-based content filtering for advanced network management. Filters can be set based on MAC address, IP address, URL and/or Domain Name.

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

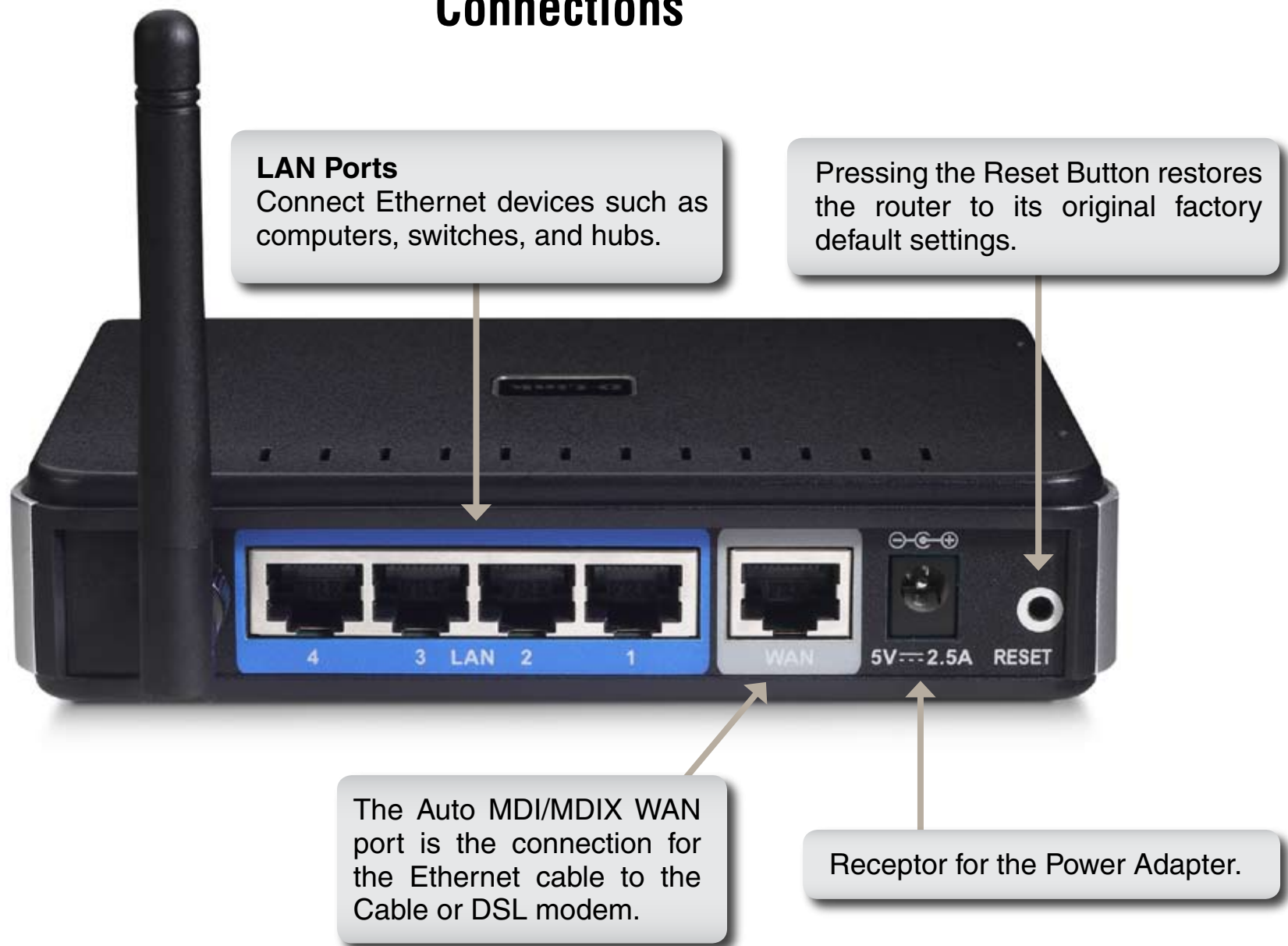
Features

- **Faster Wireless Networking** - The WBR-2310 provides up to 108Mbps* wireless connection with other 802.11g wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11g wireless router gives you the freedom of wireless networking at speeds 15x faster than 802.11b.
- **Compatible with 802.11b and 802.11g Devices** - The WBR-2310 is still fully compatible with the IEEE 802.11b standard, so it can connect with existing 802.11b PCI, USB and Cardbus adapters.
- **Advanced Firewall 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.
 - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.
 - **Secure Multiple/Concurrent Sessions** - The WBR-2310 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the WBR-2310 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the WBR-2310 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Hardware Overview

Connections



Hardware Overview

LEDs

WAN LED

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

WLAN LED

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

Power LED

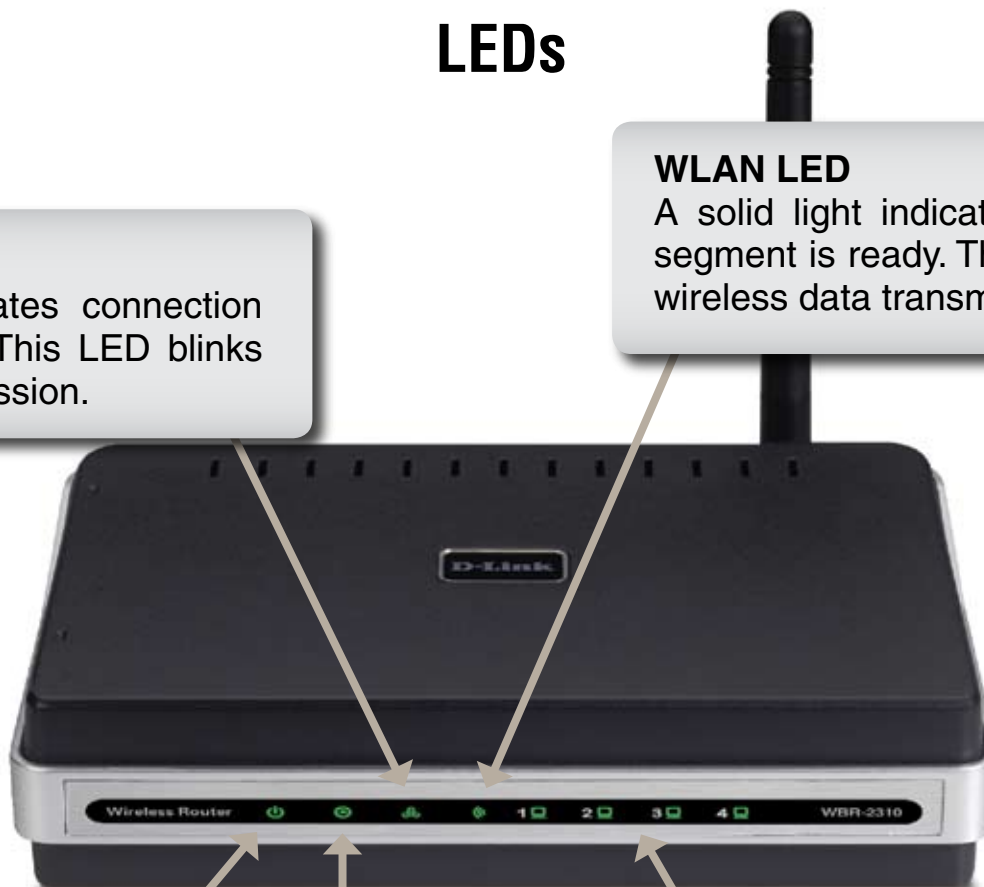
A solid light indicates a proper connection to the power supply.

Status LED

A blinking light indicates that the WBR-2310 is ready.

Local Network LEDs

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



Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

Before you Begin

Please configure the router with the computer that was last connected directly to your modem. Also, you can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the WAN port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).

If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

The D-Link wireless router lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

Connect to Cable/DSL/Satellite Modem

If you are connecting the router to a cable/DSL/satellite modem, please follow the steps below:

1. Place the router in an open and central location. Do not plug the power adapter into the router.
2. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.
3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the WAN port on the router.
4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.
5. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).
6. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 30 seconds for the router to boot.
7. Turn on your computer.
8. Verify the link lights on the router. The power light, WAN light, and the LAN light (the port that your computer is plugged into) should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.
9. Skip to page 14 to configure your router.

Connect to Another Router

If you are connecting the D-Link router to another router to use as a wireless access point and/or switch, you will have to do the following before connecting the router to your network:

- Disable UPnP™
- Disable DHCP
- Change the LAN IP address to an available address on your network. The LAN ports on the router cannot accept a DHCP address from your other router.

To connect to another router, please follow the steps below:

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.
2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **admin** and leave the password box empty. Click **OK** to continue.
3. Click on **Advanced** and then click **Advanced Network**. Uncheck the Enable UPnP checkbox. Click **Save Settings** to continue.
4. Click **Setup** and then click **Network Settings**. Uncheck the Enable DHCP Server server checkbox. Click **Save Settings** to continue.
5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.

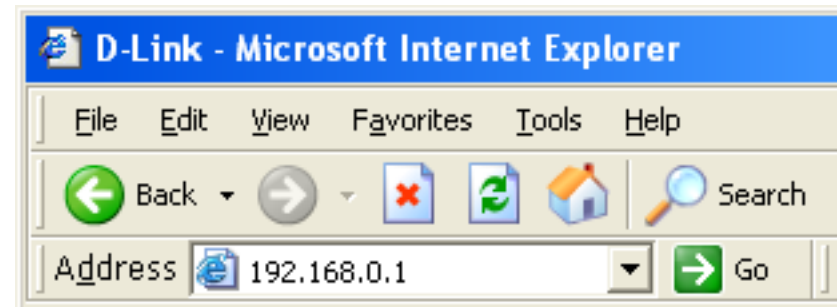
6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.
7. Connect an Ethernet cable in one of the LAN ports of the router and connect it to your other router. Do not plug anything into the WAN port of the D-Link router.
8. You may now use the other 3 LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

Configuration

This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

Web-based Configuration Utility

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (192.168.0.1).



Enter the user name (admin) and your password. Leave the password blank by default.

A screenshot of the D-Link router's login page. It has an orange header with the word "LOGIN" in white. Below the header, it says "Log in to the router:". There are two input fields: "User Name :" with "Admin" entered, and "Password :" which is empty. A "Log In" button is to the right of the password field.

If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.

Setup Wizard

You may run the setup wizard to quickly setup your router. Click **Setup Wizard** to launch the wizard.



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

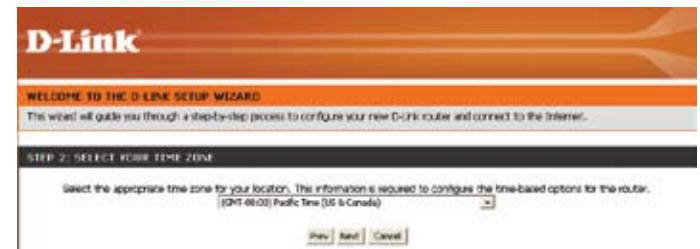


Click **Next** to continue.

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

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

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



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

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

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

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

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

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



D-Link

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

DHCP CONNECTION (DYNAMIC IP ADDRESS)

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

MAC Address : 00 - 00 - 00 - 00 - 00 - 00 (optional)

Host Name : _____

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



D-Link

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

SET USERNAME AND PASSWORD CONNECTION (PPPoE)

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

Address Mode : ☒ Dynamic IP ☐ Static IP

IP Address : 0.0.0.0

User Name : popoosname

Password : *****

Verify Password : *****

Service Name : _____ (optional)

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



D-Link

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

SET USERNAME AND PASSWORD CONNECTION (PPTP)

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

Address Mode : ☒ Dynamic IP ☐ Static IP

PPTP IP Address : 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) : 0.0.0.0

User Name : _____

Password : *****


Verify Password : *****

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



The screenshot shows the 'SET USERNAME AND PASSWORD CONNECTION (L2TP)' screen of the D-Link Setup Wizard. It includes a welcome message and instructions. The form contains fields for 'Address Mode' (Dynamic IP selected), 'L2TP IP Address', 'L2TP Subnet Mask', 'L2TP Gateway IP Address', 'L2TP Server IP Address (may be same as gateway)', 'User Name', 'Password', and 'Verify Password'. Navigation buttons 'Prev', 'Next', and 'Cancel' are at the bottom.

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



The screenshot shows the 'SET STATIC IP ADDRESS CONNECTION' screen of the D-Link Setup Wizard. It includes a welcome message and instructions. The form contains fields for 'IP Address', 'Subnet Mask', 'Gateway Address', 'Primary DNS Address', and 'Secondary DNS Address'. Navigation buttons 'Prev', 'Next', and 'Cancel' are at the bottom.

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.



The screenshot shows the 'SETUP COMPLETE' screen of the D-Link Setup Wizard. It includes a welcome message and instructions. The form contains a message: 'The Setup Wizard has completed. Click the Connect button to save your settings and reboot the router.' Navigation buttons 'Prev', 'Connect', and 'Cancel' are at the bottom.

Internet Setup

Dynamic (Cable)

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

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

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

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

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.

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar shows 'INTERNET', 'WIRELESS SETTINGS', and 'NETWORK SETTINGS'. The main content area is titled 'INTERNET CONNECTION' and contains the following sections:

- INTERNET CONNECTION:** A text box explaining that users should choose from Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. A note mentions that PPPoE requires removing client software. There are 'Save Settings' and 'Don't Save Settings' buttons.
- INTERNET CONNECTION TYPE:** A dropdown menu set to 'Dynamic IP (DHCP)'. Below it, a text box says 'Choose the mode to be used by the router to connect to the Internet.'
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE:** A section for configuring dynamic IP settings. It includes:
 - Host Name: WBR-2310
 - MAC Address: 00 - 10 - 8b - cd - ee - 04 (optional) with a 'Clone MAC Address' button.
 - Primary DNS Address: 0.0.0.0
 - Secondary DNS Address: 0.0.0.0 (optional)
 - MTU: 1500

On the right side, there is a 'Helpful Hints...' section with links to 'Wireless Settings', 'Wireless Radio', 'SSID', and 'Auto Channel Select', each with a brief description of their function.

Internet Setup

PPPoE (DSL)

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

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

User Name: Enter your PPPoE user name.

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

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

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

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

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

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

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

The screenshot shows the D-Link WBR-2310 web interface. The 'INTERNET' tab is selected, and the 'INTERNET CONNECTION' section is active. The 'INTERNET CONNECTION TYPE' is set to 'PPPoE (Username / Password)'. The 'PPPoE' section is expanded, showing fields for 'User Name', 'Password', 'Retype Password', 'Service Name', 'IP Address', 'MAC Address', 'Primary DNS Address', 'Secondary DNS Address', 'Maximum Idle Time', 'MTU', and 'Connect mode select'. The 'Dynamic PPPoE' radio button is selected. The 'Connect mode select' has three options: 'Always-on', 'Manual', and 'Connect-on demand', with 'Connect-on demand' being selected.

INTERNET CONNECTION

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

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

Save Settings Don't Save Settings

INTERNET CONNECTION TYPE :

Choose the mode to be used by the router to connect to the Internet.

My Internet Connection is : PPPoE (Username / Password) ▾

PPPOE :

Enter the information provided by your Internet Service Provider (ISP).

☒ Dynamic PPPoE ☐ Static PPPoE

User Name :

Password :

Retype Password :

Service Name : (optional)

IP Address : 0.0.0.0

MAC Address : 00 - 10 - 1b - cd - ee - 04 (optional)

Clone MAC Address

Primary DNS Address : 0.0.0.0

Secondary DNS Address : 0.0.0.0 (optional)

Maximum Idle Time : 5 Minutes

MTU : 1492

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

Helpful Hint...

Wireless Settings
The Wireless Settings section is used to configure the wireless LAN (Access Point) portion of the router. Note that some changes made in this section may also need to be matched by the wireless client devices.

Wireless Radio
This option turns on or off the wireless connection feature of the router. When the radio is turned on, the following wireless parameters are displayed.

SSID
Service Set Identifier (SSID) is the name that identifies a specific wireless local area network (WLAN). When a wireless device is browsing for available wireless networks, this is the name that will appear in the list.

Auto Channel Select
If you select this option, the router automatically finds the channel with least interference and uses that channel for wireless networking. If you disable this option, the router uses the channel that you specify with the Channel option.

Internet Setup

PPTP

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

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

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

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

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

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

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

PPTP Account: Enter your PPTP account name.

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

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

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

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

The screenshot shows the D-Link WBR-2310 router's web interface for Internet Setup. The 'PPTP' section is active, showing fields for IP Address, Subnet Mask, Gateway, DNS, PPTP Account, PPTP Password, Maximum Idle Time, MTU, and Connect Mode. The 'Dynamic IP' radio button is selected under 'Internet Connection Type'.

Internet Setup

L2TP

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

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

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

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

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

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

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

L2TP Account: Enter your L2TP account name.

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

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

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

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

The screenshot shows the D-Link WBR-2310 Web Management Interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows a tree view with options like INTERNET, WIRELESS SETTINGS, and NETWORK SETTINGS. The main content area is titled 'INTERNET CONNECTION' and contains instructions on how to configure the Internet Connection type. It lists several connection types: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. A note states that if using the PPPoE option, the user will need to remove or disable any PPPoE client software on their computer. Below the instructions are 'Save Settings' and 'Don't Save Settings' buttons. The 'INTERNET CONNECTION TYPE' section shows 'L2TP (Username / Password)' selected. The 'L2TP' section prompts the user to enter information provided by their Internet Service Provider (ISP). It includes fields for IP Address, Subnet Mask, Gateway, DNS, Server IP/Name, L2TP Account, L2TP Password, and L2TP Retype password. There are also fields for Maximum Idle Time (set to 5 minutes) and MTU (set to 1400). At the bottom, the 'Connect mode select' section shows 'Always-on', 'Manual', and 'Connect-on demand' options, with 'Connect-on demand' selected.

Internet Setup

Big Pond

User Name: Enter your Big Pond user name.

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

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

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

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

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

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- INTERNET CONNECTION:** A text box explaining that users can choose from Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. A note states that PPPoE requires removing or disabling PPPoE client software. Below this are "Save Settings" and "Don't Save Settings" buttons.
- INTERNET CONNECTION TYPE :** A dropdown menu labeled "My Internet Connection is :" with "BigPond (Australia)" selected.
- BIGPOND :** A section for entering ISP information, including:
 - User Name : [text box]
 - Password : [password box]
 - Retype Password : [password box]
 - Auth Server : [dropdown menu showing "sm-server"]
 - Login Server IP/Name : [text box] (optional)
 - MAC Address : [text box with fields for 00, 10, ab, cd, ee, 04] (optional). Below this is a "Clone MAC Address" button.

On the right side of the interface, there is a "Helpful Hints..." section with three sub-sections: "Wireless Settings", "Wireless Radio", and "SSID".

Internet Setup

Static (assigned by ISP)

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

IP Address: Enter the IP address assigned by your ISP.

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

ISP Gateway: Enter the Gateway assigned by your ISP.

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

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

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

Secondary DNS Address: Enter the Secondary 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.

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes 'D-Link', 'WBR-2310', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar has 'INTERNET', 'WIRELESS SETTINGS', and 'NETWORK SETTINGS'. The main content area is titled 'INTERNET CONNECTION' and contains instructions for configuring the Internet Connection type. It lists options: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. A note mentions that PPPoE requires removing or disabling client software. There are 'Save Settings' and 'Don't Save Settings' buttons. Below, the 'INTERNET CONNECTION TYPE' is set to 'Static IP'. The 'STATIC IP ADDRESS INTERNET CONNECTION TYPE' section prompts for static address information from the ISP. Fields include IP Address (0.0.0.0), Subnet Mask (0.0.0.0), ISP Gateway Address (0.0.0.0), MAC Address (00 - 10 - 1b - 0d - 1e - 04) with a 'Clone MAC Address' button, Primary DNS Address (0.0.0.0), Secondary DNS Address (0.0.0.0), and MTU (1500). A 'Helpful Hints...' sidebar on the right provides additional information on Wireless Settings, Wireless Radio, SSID, and Auto Channel Select.

Wireless Settings

Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions.

Wireless Network Name: Service Set Identifier (SSID) is the name of your wireless network. Create a name using up to 32 characters. The SSID is case-sensitive.

Wireless Channel: Indicates the channel setting for the WBR-2310. By default the channel is set to 6. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. The **Auto Channel Scan** setting can be selected to allow the WBR-2310 to choose the channel with the least amount of interference.

Super G Mode: Super G is a group of performance enhancement features that increase end user application throughput in an 802.11g network. Super G is backwards compatible to standard 802.11g devices. For top performance, all wireless devices on the network should be Super G capable. Select either Disabled, Super G without Turbo, Super G with Dynamic Turbo.

- Disabled - Standard 802.11g support, no enhanced capabilities.
- Super G without Turbo - Capable of Packet Bursting, FastFrames, Compression, but no Turbo mode.
- Super G with Dynamic Turbo - Capable of Packet Bursting, FastFrames, Compression, and Dynamic Turbo. This setting is backwards compatible with non-Turbo (legacy) devices. Dynamic Turbo mode is only enabled when all devices on the wireless network are Super G with Dynamic Turbo enabled.

Extended Range Mode: Extended Range Mode helps reduce dead spots by improving the reception algorithm, which allows your wireless clients to associate with the WBR-2310 at farther distances. Check the box to enable it.

802.11g Only Mode: Enable this mode if your network is made up of purely 802.11g devices. If you have both 802.11b and 802.11g wireless clients, uncheck the box.

Enable Hidden Wireless: Check this option if you would not like the SSID of your wireless network to be broadcasted by the WBR-2310. If this option is checked, the SSID of the WBR-2310 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your WBR-2310 in order to connect to it.



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: Check the box to transfer the DNS server information from your ISP to your computers. If unchecked, your computers will use the router for a DNS server.

Refer to the next page for DHCP information.

The screenshot displays the D-Link WBR-2310 Web-based Management Interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows a menu with INTERNET, WIRELESS SETTINGS, and NETWORK SETTINGS (which is currently selected). The main content area is titled 'NETWORK SETTINGS' and contains several sections:

- NETWORK SETTINGS :** A descriptive paragraph about configuring internal network settings, followed by 'Save Settings' and 'Don't Save Settings' buttons.
- ROUTER SETTINGS :** A descriptive paragraph about configuring the router's IP address, followed by input fields for 'Router IP Address' (192.168.0.1), 'Default Subnet Mask' (255.255.255.0), and 'Local Domain Name'. The 'Enable DNS Relay' checkbox is checked.
- DHCP SERVER SETTINGS :** A descriptive paragraph about configuring the built-in DHCP server, followed by 'Enable DHCP Server' (checked), 'DHCP IP Address Range' (100 to 199), and 'DHCP Lease Time' (10000 minutes).
- DYNAMIC DHCP CLIENT LIST :** A table showing the list of dynamic DHCP clients.

Host Name	IP Address	MAC Address	Expired Time
171-mrohm	192.168.0.100	00-0c-f1-fa-6d-5b	Apr/01/2002 03:06:04

DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The WBR-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 WBR-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 Server: Check the box to enable the DHCP server on your router. Uncheck to disable this function.

DHCP IP Address Range: Enter the starting and ending IP addresses for the DHCP server's IP assignment.

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

The screenshot shows the D-Link WBR-2310 Web-based Management Interface. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows the menu structure: INTERNET, WIRELESS SETTINGS, and NETWORK SETTINGS (which is currently selected). The main content area is titled "NETWORK SETTINGS" and contains three sections:

- NETWORK SETTINGS :** A brief description of the section and buttons for "Save Settings" and "Don't Save Settings".
- ROUTER SETTINGS :** Fields for Router IP Address (192.168.0.1), Default Subnet Mask (255.255.255.0), Local Domain Name, and a checked checkbox for Enable DNS Relay.
- DHCP SERVER SETTINGS :** A checked checkbox for Enable DHCP Server, a DHCP IP Address Range of 100 to 199, and a DHCP Lease Time of 10000 minutes.
- DYNAMIC DHCP CLIENT LIST :** A table showing the current DHCP clients.

Host Name	IP Address	MAC Address	Expired Time
171-mohm	192.168.0.100	00-0c-f1-fa-6d-5b	Apr/01/2002 03:06:04

Virtual Server

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

The WBR-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.

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WBR-2310 // SETUP ADVANCED TOOLS STATUS SUPPORT

VIRTUAL SERVER

VIRTUAL SERVER RULES :

The Virtual Server option allows you to define a single public port on your router for redirection to an internal LAN IP Address and Private LAN port if required. This feature is useful for hosting online services such as FTP or Web Servers.

Save Settings Don't Save Settings

20 - VIRTUAL SERVER RULES

	Name	IP Address	Port	Traffic Type	Schedule
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public	TCP	Always

Helpful Hints...

Applications 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). If you need to run applications that require multiple connections, specify the port normally associated with an application in the "TriggerPort" field, select the protocol type as TCP (Transmission Control Protocol) or UDP (User Datagram Protocol), then enter the public ports associated with the trigger port to open them for inbound traffic. At the bottom of the screen, there are already defined well-known applications. To use them, click on the edit icon enable the service and click Apply.
Name : This is the name referencing the application.
TriggerPort : This is the port used to trigger the application. It can be either a single port or a range of ports.
Trigger Type : This is the

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

Virtual Server: Check the box to enabled the rule.

Name: Enter a name for the rule.

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

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

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

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.

The screenshot shows the D-Link WBR-2310 Web User Interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration sections: VIRTUAL SERVER, PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ADVANCED WIRELESS, and ADVANCED NETWORK. The main content area is titled 'VIRTUAL SERVER RULES' and contains a description of the feature. Below the description are two buttons: 'Save Settings' and 'Don't Save Settings'. A table titled '20 - VIRTUAL SERVER RULES' displays a list of configured rules. Each rule row includes a checkbox, a 'Name' field, an 'IP Address' field, a 'Port' field (with Public and Private sub-fields), a 'Traffic Type' dropdown, and a 'Schedule' dropdown. The table shows four rules, all with checkboxes checked and 'Always' selected for the schedule. On the right side of the interface, there is a 'Helpful Hints...' section with text explaining the 'Applications Rules' and the 'TriggerPort' field.

	Name	IP Address	Port	Traffic Type	Schedule
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public Private	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public Private	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public Private	TCP	Always
<input checked="" type="checkbox"/>	<< Application Name >>	<< Computer Name >>	Public Private	TCP	Always

Helpful Hints...
Applications 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). If you need to run applications that require multiple connections, specify the port normally associated with an application in the "TriggerPort" field, select the protocol type as TCP (Transmission Control Protocol) or UDP (User Datagram Protocol), then enter the public ports associated with the trigger port to open them for inbound traffic. At the bottom of the screen, there are already defined well-known applications. To use them, click on the edit icon enable the service and click Apply.
 Name ? This is the name referencing the application.
 TriggerPort ? This is the port used to trigger the application. It can be either a single port or a range of ports.
 Trigger Type ? This is the

Port Forwarding

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

Rule: Check the box to enable the rule.

Name: Enter a name for the rule.

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

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

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

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

Schedule: The schedule of time when the Port Forwarding 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.

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: VIRTUAL SERVER, PORT FORWARDING (selected), APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ADVANCED WIRELESS, and ADVANCED NETWORK. The main content area is titled 'PORT FORWARDING RULES' and contains a description: 'The Port Forwarding option is used to open a single port or a range of ports through your firewall and redirect data through those ports to a single PC on your network.' Below this are 'Save Settings' and 'Don't Save Settings' buttons. A section titled '20- PORT FORWARDING RULES' displays a table with three rows, each representing a rule. Each row has a checkbox, a 'Name' field, an 'IP Address' field, and a 'Port' field. The 'Port' field is further divided into 'Start' and 'End' sub-fields. To the right of the 'Port' field is a 'Traffic Type' dropdown menu (set to 'TCP') and a 'Schedule' dropdown menu (set to 'Always'). On the far right, a 'Helpful Hints...' section provides examples: 'Port Ranges Example: Starting Port is 50 and Ending Port is 100, this will open ports 50-100 in your firewall.' and 'Single Port Example: Starting Port is 80 and Ending Port is also 80, this will open up ONLY port 80 in your firewall.'

Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the WBR-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 WBR-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.

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

Trigger Type: Select the protocol of the trigger port (TCP, UDP, or ANY).

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

Port Type: Select the protocol of the firewall port (TCP, UDP, or ANY).

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.

Network Filters

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

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

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

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

The screenshot shows the D-Link WBR-2310 Advanced Setup page. The 'ADVANCED' tab is selected. On the left sidebar, 'NETWORK FILTER' is highlighted. The main content area is titled 'MAC FILTERING RULES :'. It contains a text box explaining that MAC filtering is used to control network access based on the MAC address of the network adapter. Below this are 'Save Settings' and 'Don't Save Settings' buttons. A section titled '20 - MAC FILTERING RULES' shows a configuration option set to 'Turn MAC Filtering ON and ALLOW computers listed to access the network'. Below this is a table with columns for 'MAC Address' and 'DHCP Client List'. The table has four rows. The first row shows a MAC address '00-0c-41-7a-6d-5b' and a DHCP client '192.168.0.100'. The other three rows show '00-00-00-00-00-00' and 'Select Machine'. Each row has a '<<' button and a 'CLEAR' button. On the right side, there is a 'Helpful Hints...' section with a 'MAC Filters' tip explaining how to use MAC filters to deny or allow access.

MAC Address	DHCP Client List	
00-0c-41-7a-6d-5b	192.168.0.100	CLEAR
00-00-00-00-00-00	Select Machine	CLEAR
00-00-00-00-00-00	Select Machine	CLEAR
00-00-00-00-00-00	Select Machine	CLEAR

Website Filters

URL and domain blocking are used to deny LAN computers from accessing specific web sites by the URL or domain. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display. To use this feature, enter the text string to be blocked and click **Apply**. The text to be blocked will appear in the list. To delete the text, just highlight it and click **Delete**.

Configure Website Filter: Select **Turn Website Filtering OFF**, **Turn Website Filtering ON** and **ALLOW** computers access to **ONLY** these sites, or **Turn Website Filtering ON** and **DENY** computers access to **ONLY** these sites.

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

The screenshot shows the D-Link WBR-2310 Advanced Setup page. The left sidebar contains navigation links: VIRTUAL SERVER, PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER (selected), FIREWALL SETTINGS, ADVANCED WIRELESS, and ADVANCED NETWORK. The main content area is titled 'WEBSITE FILTERING RULES' and includes a description: 'The Website Filter option allows you to set-up a list of Websites that the users on your network will either be allowed or denied access to.' Below this are 'Save Settings' and 'Don't Save Settings' buttons. A section titled '40 - WEBSITE FILTERING RULES' contains a 'Configure MAC Filtering below:' dropdown menu set to 'Turn Website Filtering OFF' and a 'Clear the list below...' button. At the bottom is a table with two columns, 'Website URL/Domain', each containing eight empty text input fields. On the right side, there is a 'Helpful Hints...' section titled 'Website Filter' explaining the feature and providing an example of blocking URLs containing the word 'shopping'.

Website Filter :
It is used to deny computers on your network from accessing specific web sites by its URL (Uniform Resource Locator). 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 be displayed.

Example:
If you wanted to block LAN users from any website containing a URL pertaining to shopping, you would need to enter "shopping" into the URL Blocking list. Sites like these will be denied access to LAN users because they contain the keyword in the URL:
<http://www.shopping.com>
<http://www.shopping.com>
<http://www.shopping.com>
<http://www.shopping.com>

Firewall Settings

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

If you have a client PC that cannot run Internet applications properly from behind the WBR-2310, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

Enable DMZ Host: Check this box to enable DMZ.

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

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

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

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

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WBR-2310

SETUP ADVANCED TOOLS STATUS SUPPORT

FIREWALL SETTINGS :

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

Save Settings Don't Save Settings

DMZ HOST :

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

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

Enable DMZ Host : ☐

DMZ IP Address : 0.0.0.0 << Select Machine

VPN PASSTHROUGH :

Enable PPTP Passthrough : ☒

Enable L2TP Passthrough : ☒

Enable IPSec Passthrough : ☒

Helpful Hints...

Firewall Rule: The Firewall section contains advanced settings used to deny or allow traffic from passing through the WBR-2310. Entries created on this page can be configured to affect either Inbound or Outbound traffic.

Name – The name associated with the Firewall Rule.

Action – Select either Allow or Deny based on what type of rule you are trying to create. If Allow is selected, the specified Protocol and Port will be permitted to pass from the Source to the Destination. If Deny is selected, the specified Protocol and Port will be denied from passing from the Source to the Destination.

Source Interface – Choose the interface, either LAN or WAN, that the specified Protocol and Port will be originating from. If you would like this rule to affect traffic originating from either interface, select the

Advanced Wireless Settings

TX Rate: Select the basic transfer rates based on the speed of wireless adapters on your wireless network. It is strongly recommended to keep this setting to **Auto**.

Transmit Power: Set the transmit power of the antennas.

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

RTS Threshold: This value should remain at its default setting of 2346. If inconsistent data flow is a problem, only a minor modification should be made.

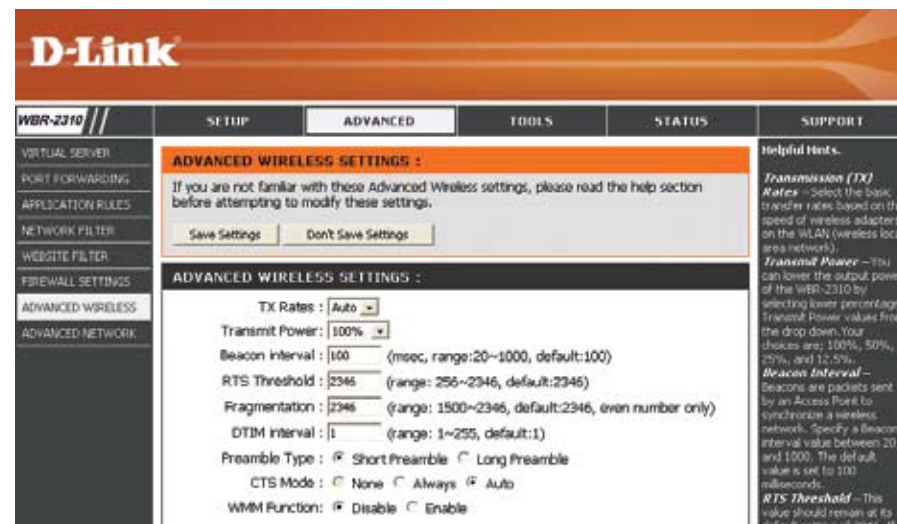
Fragmentation: The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

DTIM Interval: (Delivery Traffic Indication Message) 3 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

Preamble Type: Select Short or Long Preamble. The Preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) for communication between the wireless router and the roaming wireless network adapters. Auto is the default setting. Note: High network traffic areas should use the shorter preamble type.

CTS Mode: CTS (Clear To Send) is a function used to minimize collisions among wireless devices on a wireless local area network (LAN). CTS will make sure the wireless network is clear before a wireless client attempts to send wireless data. Enabling CTS will add overhead and may lower wireless throughput. **None:** CTS is typically used in a pure 802.11g environment. If CTS is set to "None" in a mixed mode environment populated by 802.11b clients, wireless collisions may occur frequently. **Always:** CTS will always be used to make sure the wireless LAN is clear before sending data. **Auto:** CTS will monitor the wireless network and automatically decide whether to implement CTS based on the amount of traffic and collisions that occurs on the wireless network.

WMM Function: WMM is QoS for your wireless network. Enable this option to improve the quality of video and voice applications for your wireless clients.



Advanced Network Settings

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

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

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

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

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

The screenshot displays the D-Link WBR-2310 Advanced Network Settings interface. The left sidebar contains a menu with options: VIRTUAL SERVER, PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ADVANCED WIRELESS, and ADVANCED NETWORK (which is selected). The main content area is titled 'ADVANCED' and contains several sections:

- NETWORK SETTINGS :** A message states: 'If you are not familiar with these Advanced Network settings, please read the help section before attempting to enable or disable them.' Below this are two buttons: 'Save Settings' and 'Don't Save Settings'.
- UPNP :** A message states: 'Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices.' Below this is a checkbox labeled 'Enable UPnP' which is checked.
- WAN PING :** A message states: 'If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address.' Below this is a checkbox labeled 'Enable WAN Ping Respond' which is checked.
- WAN SELECT TO 10/100 MBPS :** A dropdown menu is set to '10/100Mbps Auto'.
- GAMING MODE :** A message states: 'If you are having difficulties playing some online games - please enable this mode.' Below this is a checkbox labeled 'Enable GAMING mode' which is checked.
- MULTICAST STREAMS :** A checkbox labeled 'Enable Multicast Streams' is checked.

On the right side of the interface, there is a 'Helpful Hints...' link.

Administrator Settings

This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes. Only the admin account has the ability to change both admin and user account passwords.

Administrator Login Name: Enter a new Login Name for the Administrator account.

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

User Login Name: Enter a new Login Name for the User account.

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

Remote Management: Remote management allows the WBR-2310 to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

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

Port: The port number used to access the WBR-2310.
Example: http://x.x.x.x:8080 whereas x.x.x.x is the WAN IP address of the WBR-2310 and 8080 is the port used for the Web Management interface.

The screenshot shows the D-Link WBR-2310 web management interface. The top navigation bar includes 'WBR-2310', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings categories: ADMIN, TIME, SYSTEM, FIRMWARE, DNS, SYSTEM CHECK, SCHEDULES, and LOG SETTINGS. The main content area is titled 'ADMINISTRATOR SETTINGS' and contains the following sections:

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

On the right side of the interface, there is a 'Helpful Hints...' section with additional information about the accounts and password requirements.

Time Settings

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.

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

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. Click Set Time. You can also click Copy Your Computer's Time Settings.

The screenshot shows the D-Link WBR-2310 web interface for Time Configuration. The interface is divided into several sections:

- TIME :** Contains a description of the Time Configuration option and buttons for "Save Settings" and "Don't Save Settings".
- TIME CONFIGURATION :** Includes fields for "Time" (Apr/01/2002 00:50:57), "Time Zone" (GMT-08:00 Pacific Time (US & Canada)), and "Interval" (1 hrs). It also has a checkbox for "Enable Daylight Saving".
- DAYLIGHT SAVING SETTINGS :** Includes fields for "DST Start" (Jan 1st 12 am) and "DST End" (Jan 1st 12 am).
- AUTOMATIC TIME CONFIGURATION :** Includes a checkbox for "Enable NTP server" and a field for "NTP Server Used" with a "Select NTP Server" button.
- SET THE DATE AND TIME MANUALLY :** Includes fields for "Current Gateway Time" with dropdowns for Year (2002), Month (Apr), Day (01), Hour (00), Minute (50), and Second (57). It also has a "Copy Your Computer's Time Settings" button.

On the right side of the interface, there is a "Helpful Hints..." section with the following text:

System Time
The "system time" setting is used by the unit for synchronizing scheduling services and system logging activities. You will need to set the time zone corresponding to your location. The time can be set manually or the device can connect to a NTP (Network Time Protocol) server to retrieve the time. You may also set Daylight Saving dates and the system time will automatically adjust on those dates.

Automatic — Enter the NTP server which you would like the WBR-2310 to synchronize its time with. Also, select the interval at which the WBR-2310 will communicate with the specified NTP server.

Manual — Select this option if you would like to specify the time manually. You must specify the Year, Month, Day, Hour, Minute, and Second, or you can click the Computer Clock button to copy the system time from the computer being used to access the management interface.

Time Zone — Select the Time Zone for the region you are in.

Daylight Saving — If the region you are in observes Daylight Savings Time, enable this option and specify the Starting and Ending Month and Week for this time of the year.

System Settings

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

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

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



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.ca>. You can download firmware upgrades to your hard drive from the D-Link support site.

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

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

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes links for ADMIN, TIME, SYSTEM, FIRMWARE, DNS, SYSTEM CHECK, SCHEDULES, and LOG SETTINGS. The main content area is titled 'FIRMWARE UPGRADE :'. It contains a message about checking for new firmware and a link to the support site. Below this, there are instructions on how to upgrade the firmware using the 'Browse' button. At the bottom, there is a section for 'CURRENT FIRMWARE INFO' showing the current version (1.00) and date (Dec 6, 2005), with a 'Browse...' button to select a new file. On the right side, there is a 'Helpful Hints...' section with additional instructions.

WBR-2310	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	FIRMWARE UPGRADE : There may be new firmware for your WBR-2310 to improve functionality and performance. Click here to check for an upgrade on our support site. To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Apply button below to start the firmware upgrade. <div> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </div>				Helpful Hints... Firmware Upgrade You can upgrade the firmware of the device using this tool. Make sure that the firmware you want to use is saved on the local hard drive of the computer. Click on Browse to search the local hard drive for the firmware to be used for the update. Upgrading the firmware will not change any of your system settings but it is recommended that you save your system settings before doing a firmware upgrade. Please check the D-Link support site for
TIME					
SYSTEM					
FIRMWARE					
DNS					
SYSTEM CHECK					
SCHEDULES					
LOG SETTINGS					
CURRENT FIRMWARE INFO : Current Firmware Version 1.00 Firmware Date Dec 6, 2005 <div> <input type="text"/> <input type="button" value="Browse..."/> </div>					

DDNS

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 Address: Choose your DDNS provider from the drop down menu.

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

Username: Enter the Username for your DDNS account.

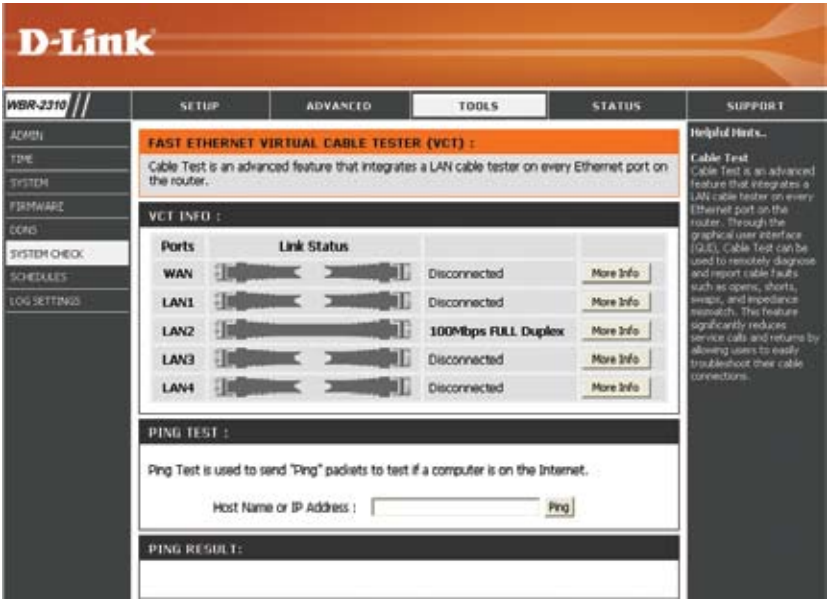
Password: Enter the Password for your DDNS account.

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: ADMIN, TIME, SYSTEM, FIRMWARE, DDNS (selected), SYSTEM CHECK, SCHEDULES, and LOG SETTINGS. The main content area is titled 'DYNAMIC DNS :'. It contains an introductory paragraph about Dynamic DNS, a note about the WBR-2310's automatic update feature, and two buttons: 'Save Settings' and 'Don't Save Settings'. Below this is the 'DDNS SETTINGS :' section, which includes a checkbox for 'Enable DDNS' (checked), a 'Server Address' dropdown menu (set to 'DynDns.org'), and input fields for 'Host Name', 'Username', and 'Password'. On the right side of the interface, there is a 'Helpful Hints...' section with additional information about Dynamic DNS and a note about the 'Server Address' dropdown.

System Test

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

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



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.

D-Link

WBR-2310 // SETUP ADVANCED TOOLS STATUS SUPPORT

ADMIN
TIME
SYSTEM
FIRMWARE
DNS
SYSTEM CHECK
SCHEDULES
LOG SETTINGS

SCHEDULES :

The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.

Save Settings Don't Save Settings

ADD SCHEDULE RULE :

Name :

Day(s) : ☐ All Week ☐ Select Day(s)

Sun to Sun

All Day - 24 hrs : ☐

Start Time : : AM (hour:minute, 12 hour time)

End Time : : AM (hour:minute, 12 hour time)

SCHEDULE RULES LIST :

Name :	Day(s) :	Time Frame :
--------	----------	--------------

Helpful Hints...

Log Settings

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared.

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

Email Address: The email address to which the logs will be sent. Click on **Send Mail Now** to send the email.

Save Log File to Local Hard Drive: Click to save the log to your hard drive.

Log Type: Check the type of alert you want logged.

The screenshot shows the D-Link WBR-2310 Web Management Interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options: ADMIN, TIME, SYSTEM, FIRMWARE, DDNS, SYSTEM CHECK, SCHEDULES, and LOG SETTINGS (which is currently selected). The main content area is titled 'LOG SETTINGS' and contains the following sections:

- LOG SETTINGS :** A message states 'Logs can be saved by sending it to an admin email address.' Below this are two buttons: 'Save Settings' and 'Don't Save Settings'.
- LOG FILES :** This section contains several input fields and checkboxes:
 - 'SMTP Server / IP Address' with an empty text box.
 - 'Email Address' with an empty text box and a 'Send Mail Now' button to its right.
 - 'Save Log File To Local Hard Drive' with a 'Save' button.
 - 'Log Type' with a list of checkboxes:
 - ☒ System Activity
 - ☐ Debug Information
 - ☒ Attacks
 - ☐ Dropped Packets
 - ☒ Notice

On the right side of the interface, there is a 'Helpful Hints...' section with the following text:

Log Settings
Not only does the device display the logs of activities and events, it can be setup to send these logs to another location. The logs can be sent via email to a specific email account.

SMTP Server / IP Address - The address of the SMTP (Simple Mail Transfer Protocol) server that will be used to send the logs.

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

Save - Click this button to save the log entries to a text file.

Next - Moves forward one log page.

Clear - Clears the logs completely.

Log Type - Select the type of information you would like the WBR-2310 to log.

Device Information

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

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

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

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

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

Wireless: Displays the wireless MAC address and your wireless settings such as SSID and Channel.

The screenshot shows the D-Link WBR-2310 web interface. The top navigation bar includes links for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains links for DEVICE INFO, LOG, STATUS, and WIRELESS. The main content area is titled 'DEVICE INFORMATION' and contains the following details:

- Device Information:** All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.
 - Firmware Version: 1.00 , Dec 6, 2005
- LAN :**
 - MAC Address : 00-10-ab-cd-ee-03
 - IP Address : 192.168.0.1
 - Subnet Mask : 255.255.255.0
 - DHCP Server : Enabled
- WAN:**
 - MAC Address : 00-10-ab-cd-ee-04
 - Connection : DHCP Client Disconnected
 - Buttons: DHCP Release, DHCP Renew
 - IP Address : 0.0.0.0
 - Subnet Mask : 0.0.0.0
 - Default Gateway : 0.0.0.0
 - DNS :
- WIRELESS 802.11G :**
 - SSID : dlink
 - Channel : 6
 - Encryption : Disabled

On the right side, there is a 'Helpful Hints...' section with a 'Device Information' link. The text explains that this page displays current information for the WBR-2310, including the firmware version and details for the LAN, WAN, and Wireless networks.

Log

First Page: View the first page of the log.

Last Page: View the last page of the log.

Previous: View the previous page.

Next: View the next page.

Clear: Clear the log.

D-Link

WBR-2310 //

SETUP ADVANCED TOOLS STATUS SUPPORT

DEVICE INFO
LOG
STATS
WIRELESS

VIEW LOG :
View Log displays the activities occurring on the WBR-2310.

LOG FILES :

First Page Last Page Previous Next Clear

Page 1 of 20

Time	Message	Source	Destination	Note
Apr/01/2002 01:04:49	DHCP Discover no response			
Apr/01/2002 01:04:49	DHCP Discover			
Apr/01/2002 01:04:33	DHCP Discover			
Apr/01/2002 01:04:24	DHCP Discover			
Apr/01/2002 01:04:19	DHCP Discover			
Apr/01/2002 01:04:17	DHCP Discover			
Apr/01/2002 01:04:15	DHCP Discover no response			
Apr/01/2002 01:04:15	DHCP Discover			
Apr/01/2002 01:03:58	DHCP Discover			
Apr/01/2002 01:03:50	DHCP Discover			

Helpful Hints...
Log
The WBR-2310 keeps a running log of events and activities occurring on it at all times. The log will display up to 200 recent logs. Newer log activities will overwrite the older logs. You can save the log files or have them emailed to you by clicking on the Log Settings button. This is recommended as the logs are cleared every time the router is rebooted.
First Page - Click this button to go to the first page of the log.
Last Page - Click this button to go to the last page of the log.
Previous - Moves back one log page.
Next - Moves forward one log page.
Clear - Clears the logs completely.
Log Settings - Brings up the page to configure what information is logged and also how you would like to

Stats

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

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WBR-2310	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT											
DEVICE INFO	TRAFFIC STATISTICS :				Helpful Hints... Stats The WBR-2310 keeps statistic of the data traffic that it handles. You are able to view the amount of packets that the router has Received and Transmitted on the WAN, LAN, and Wireless interfaces. Refresh -Click this button to update the counters. Reset -Click this button to clear the counters. The traffic counter will reset when the device is rebooted.											
LOG	Traffic Statistics display Receive and Transmit packets passing through the WBR-2310.															
STATS																
WIRELESS																
<div>RefreshReset</div> <table><thead><tr><th></th><th>Receive</th><th>Transmit</th></tr></thead><tbody><tr><td>WAN</td><td>0 Packets</td><td>594 Packets</td></tr><tr><td>LAN</td><td>3502 Packets</td><td>4510 Packets</td></tr><tr><td>WIRELESS 11g</td><td>0 Packets</td><td>2813 Packets</td></tr></tbody></table>						Receive	Transmit	WAN	0 Packets	594 Packets	LAN	3502 Packets	4510 Packets	WIRELESS 11g	0 Packets	2813 Packets
	Receive	Transmit														
WAN	0 Packets	594 Packets														
LAN	3502 Packets	4510 Packets														
WIRELESS 11g	0 Packets	2813 Packets														

Wireless

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

D-Link

WBR-2310 //	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT		
DEVICE INFO	<div>CONNECTED WIRELESS CLIENT LIST :</div> <div>The Wireless Client table below displays Wireless clients Connected to the AP (Access Point). to the AP (Access Point).</div>				<div>Helpful Hints..</div> <div>Wireless</div> <div>Use this page in order to view how many wireless clients have associated with the WBR-2310. This page shows the MAC address of each associated client, how long they have been associated, and the mode they are connecting in (802.11b or 802.11g).</div>		
LOG							
STATS							
WIRELESS	<table><thead><tr><th>Connected Time</th><th>MAC Address</th><th>Mode</th></tr></thead></table>					Connected Time	MAC Address
Connected Time	MAC Address	Mode					

Support

WBR-2310

MENU

SETUP

ADVANCED

TOOLS

STATUS

SUPPORT

SUPPORT MENU

Setup

- Setup Wizard
- Wireless Settings
- WAN Settings
- LAN Settings
- DHCP Server

Advanced

- Virtual Server
- Special Applications
- Filters
- Firewall Rules
- DMZ
- Wireless Performance

Tools

- Administrator Settings
- System Time
- System Settings
- Firmware Upgrade
- Miscellaneous Items
- Cable Test

Status

- Device Information
- Log
- Traffic Statistics
- Connected Wireless Client List

FAQs

Helpful Hints..

D-Link WBR-2310 User Manual

48

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The WBR-2310 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

Configure WEP

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WEP Security**.
3. Next to *Authentication*, select **Shared Key**.
4. Select either **64-bit** or **128-bit** encryption from the drop-down menu next to *WEP Encryption*.
5. Next to *Key Type*, select either **Hex** or **ASCII**.
Hex (recommended) - Letters A-F and numbers 0-9 are valid.
ASCII - All numbers and letters are valid.
6. Next to *Key 1*, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.
7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.

WIRELESS SECURITY MODE :

Security Mode : **Enable WEP Wireless Security (basic)**

WEP :

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the router and the wireless stations. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP set the authentication type to "Shared Key" when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for 64 bit keys, and a maximum of 13 characters for 128 bit keys.

Authentication : **Shared Key**

WEP Encryption : **64Bit**

Key Type : **HEX**

Default WEP Key : **WEP Key 1**

WEP Key 1 :

WEP Key 2 :

WEP Key 3 :

WEP Key 4 :

Configure WPA-PSK

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.
3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.
4. Next to *PSK/EAP*, select **PSK**.
5. Next to *Passphrase*, enter a key (passphrase). The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.
6. Enter the passphrase again next to *Confirmed Passphrase*.
7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK (or WPA2-PSK) on your adapter and enter the same passphrase as you did on the router.

WIRELESS SECURITY MODE :

Security Mode : Enable WPA-Personal Wireless Security (enhanced)

WPA-PERSONAL :

WPA-Personal requires stations to use high grade encryption and authentication.

Cipher Type : AUTO

PSK / EAP : PSK

Passphrase :

Confirmed Passphrase :

Configure WPA (RADIUS)

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.
3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.
4. Next to *PSK/EAP*, select **EAP**.
5. Next to *RADIUS Server 1* enter the IP Address of your RADIUS server.
6. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
7. Next to *Shared Secret*, enter the security key.
8. If you have a secondary RADIUS server, enter its IP address, port, and secret key.
9. Click **Apply Settings** to save your settings.

WIRELESS SECURITY MODE :
 Security Mode : Enable WPA-Personal Wireless Security (enhanced)

WPA-PERSONAL :
 WPA-Personal requires stations to use high grade encryption and authentication.

 Cipher Type : AUTO
 PSK / EAP : EAP

 802.1X
 RADIUS Server 1 : IP 0.0.0.0
 Port 1812
 Shared Secret
 RADIUS Server 2 : IP 0.0.0.0
 Port 0
 Shared Secret

Connect to a Wireless Network Using Windows Vista®

Windows Vista® users may use the built-in wireless utility. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows Vista® utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

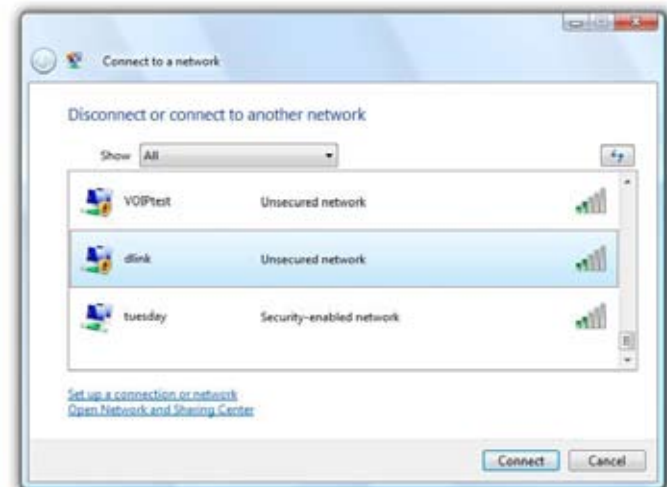
or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **Connect to a network**.



The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



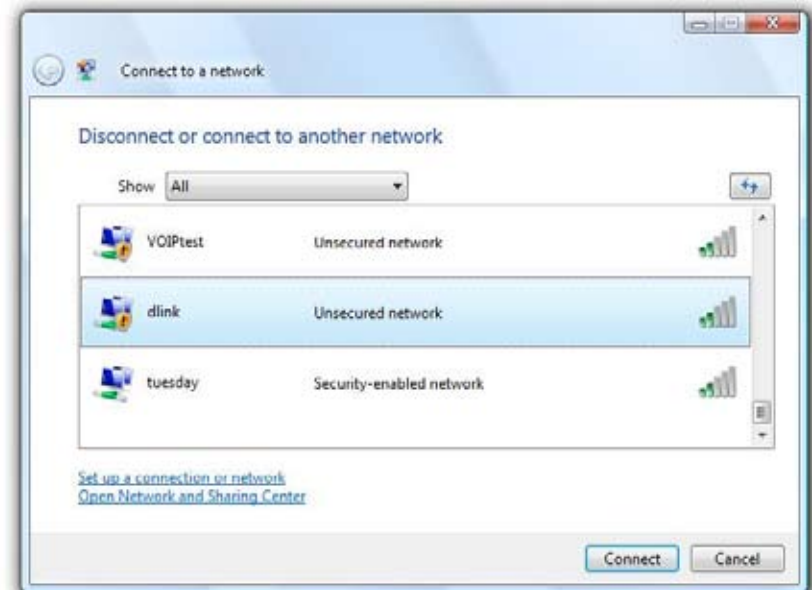
Configure Wireless Security

It is recommended to enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Open the Windows Vista® Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.



2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. Enter the same security key or passphrase that is on your router and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.



Connect to a Wireless Network Using Windows® XP

Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

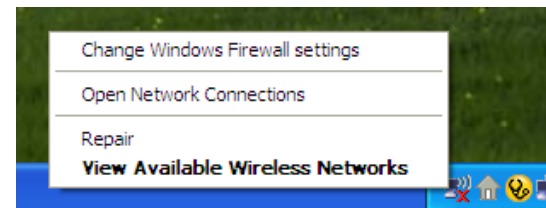
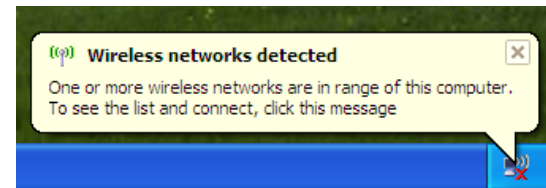
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

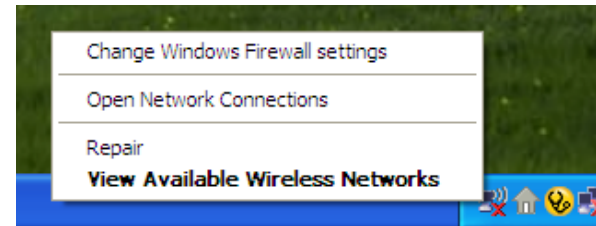
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



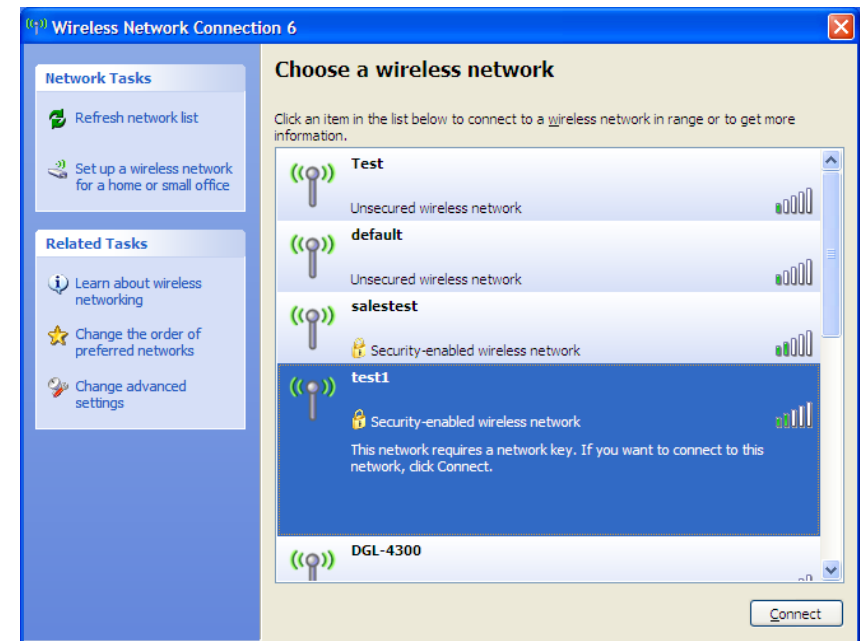
Configure WEP

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

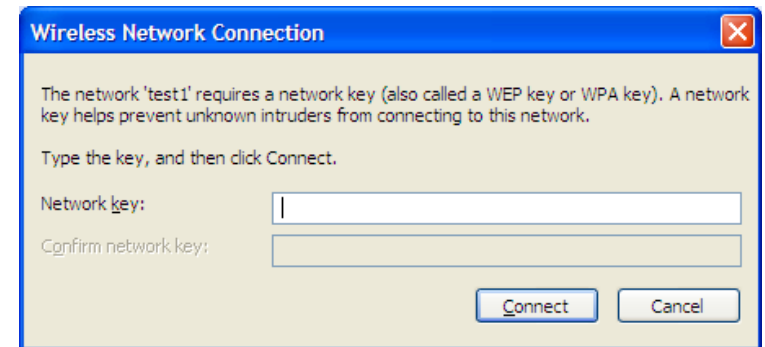


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your router and click **Connect**.

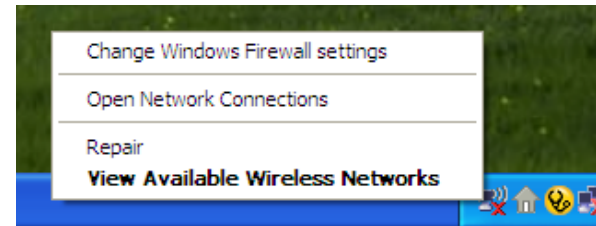
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless router.



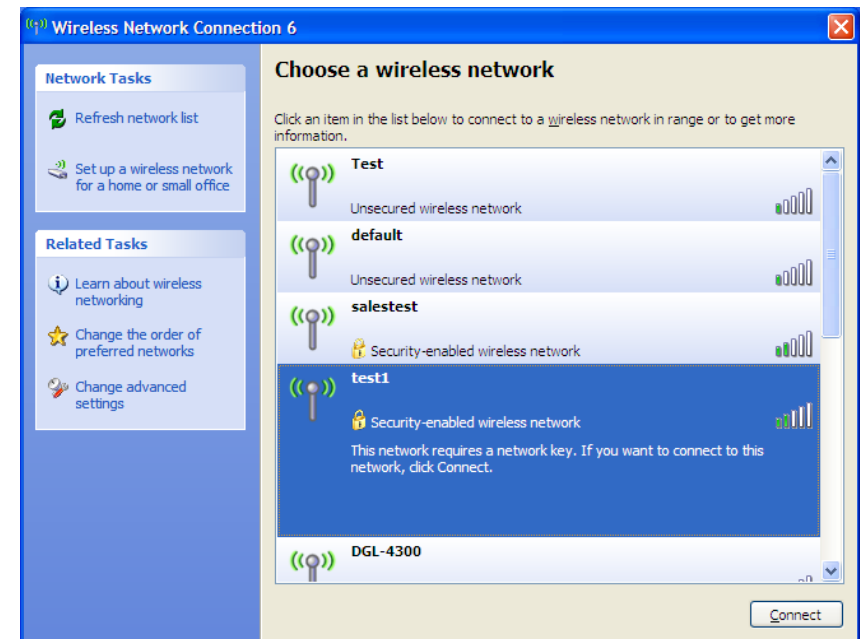
Configure WPA-PSK

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

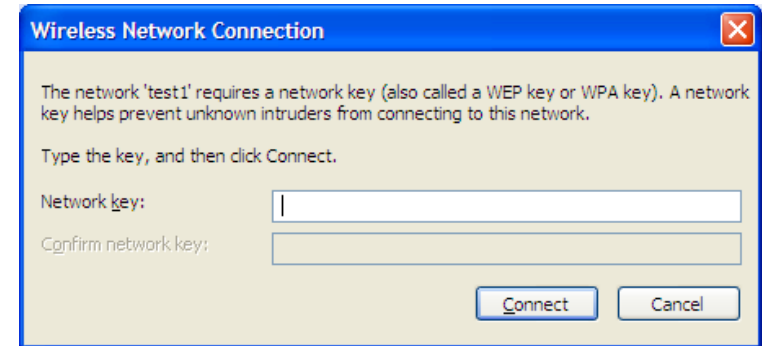


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless router.



Troubleshooting

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping yahoo.com -f -l 1472
Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:
Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 93ms, Maximum = 203ms, Average = 132ms

C:\>
```

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

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

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

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **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 email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

Why D-Link Wireless?

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or Access Point

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more WBR-2310 wireless network Cardbus adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Networking Basics

Check your IP address

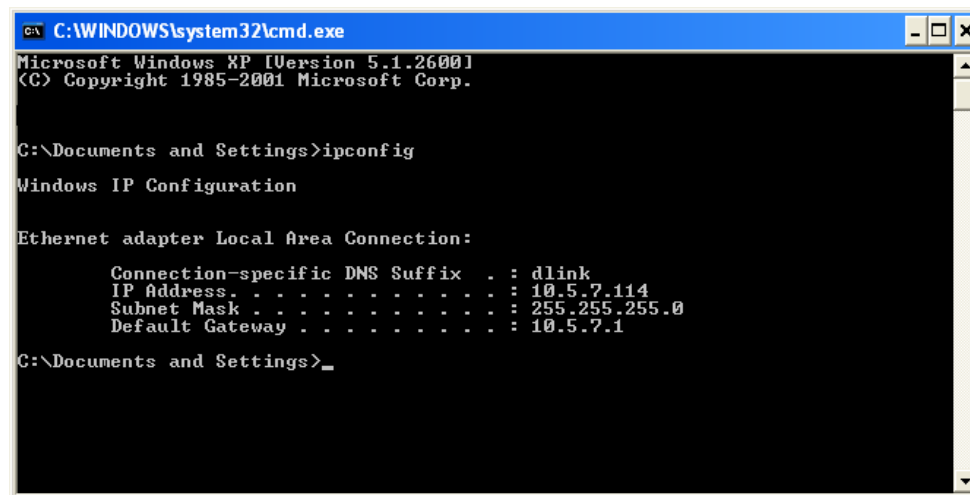
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows Vista® users type *cmd* in the **Start Search** box.)

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

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

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



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>_
```

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

Statically Assign an IP address

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

Step 1

Windows 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

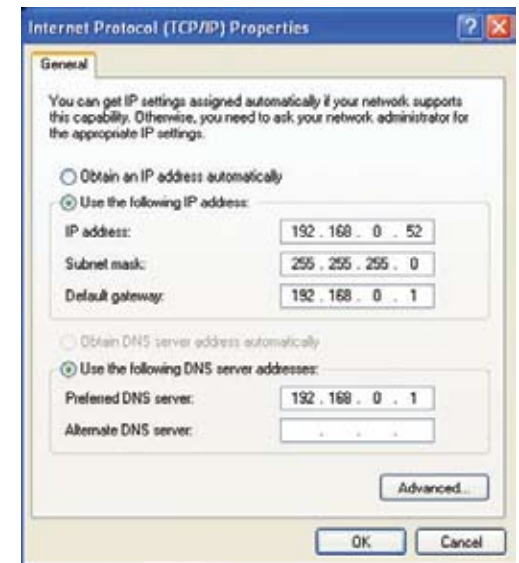
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

VPN Pass Through / Multi-Sessions

- PPTP
- L2TP
- IPSec

Device Management

- Web-Based: Internet Explorer v6 or later; Mozilla Firefox v1.5 or later; or other Java-enabled browsers.

Wireless Signal Rates*

- 108Mbps
- 54Mbps
- 36Mbps
- 18Mbps
- 11Mbps
- 6Mbps
- 2Mbps
- 48Mbps
- 24Mbps
- 12Mbps
- 9Mbps
- 5.5Mbps
- 1Mbps

Security

- WPA - Wi-Fi Protected Access (TKIP, MIC, IV Expansion, Shared Key Authentication)
- 802.1x
- 64/128-bit WEP

Media Access Control

- CSMA/CA with ACK

Frequency Range

- 2.4GHz to 2.462GHz

Wireless Signal Range*

- Indoors: Up to 328 feet (100 meters)
- Outdoors: Up to 1,312 feet (400 meters)

Modulation Technology

- Orthogonal Frequency Division Multiplexing (OFDM)
- Complementary Code Keying (CCK)

Receiver Sensitivity

- 54Mbps OFDM, 10% PER, -68dBm)
- 48Mbps OFDM, 10% PER, -68dBm)
- 36Mbps OFDM, 10% PER, -75dBm)
- 24Mbps OFDM, 10% PER, -79dBm)
- 18Mbps OFDM, 10% PER, -82dBm)
- 12Mbps OFDM, 10% PER, -84dBm)
- 11Mbps CCK, 8% PER, -82dBm)
- 9Mbps OFDM, 10% PER, -87dBm)
- 6Mbps OFDM, 10% PER, -88dBm)
- 5.5Mbps CCK, 8% PER, -85dBm)
- 2Mbps QPSK, 8% PER, -86dBm)
- 1Mbps BPSK, 8% PER, -89dBm)

Transmitter Output Power

- 15dBm \pm 2dB

External Antenna Type

- Single detachable reverse SMA

LEDs

- Power
- WLAN
- WAN
- LAN (10/100)

Operating Temperature

- 32°F to 131°F (0°C to 55°C)

Humidity

- 95% maximum (non-condensing)

Power Input

- Ext. Power Supply DC 5V, 2.5A

Safety & Emissions

- FCC

Dimensions

- L = 5.72 inches (145mm)
- W = 4.60 inches (116.84mm)
- H = 1.38 inches (35mm)

Weight

- ~10.3 Ounces

Warranty

- 1 Year Limited

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

Contacting Technical Support

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. WBR-2310)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev B1))
- 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 Canada:

Phone Support:

(800) 361-5265

English: 24 Hours - 7 Days

French: Lundi - Vendredi 9h - 21h

Internet Support:

<http://support.dlink.ca>

Warranty

Subject to the terms and conditions set forth herein, D-Link Networks, 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 that are purchased from D-Link or its authorized reseller or distributor and delivered within Canada.

Limited Warranty:

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

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

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

Limited Software Warranty:

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

conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

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

Submitting A Claim:

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

- 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 from customer service.
- 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., 2180 Winston Park Drive, Oakville, Ontario, Canada L6H 5W1. 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 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: 1-877-354-6561 Hours of Operation: Monday-Friday, 10:30AM – 7:00PM 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 NON INFRINGEMENT.

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CE Mark Warning:

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

FCC Statement:

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

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

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

Registration



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

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