



User Manual

DGL-4500

XTREME N™
GAMING ROUTER

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
1.0	August 22, 2007	DGL-4500 Revision A1 with firmware version 1.00

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Package Contents

D-Link DGL-4500 Gaming Router	
Power Adapter	
Ethernet Cable	
CD-ROM	
Stand	

Note: Using a power supply with a different voltage rating than the one included with the DGL-4500 will cause damage and void the warranty for this product.

System Requirements

<p>Network Requirements</p>	<ul style="list-style-type: none"> • An Ethernet-based Cable or DSL modem • IEEE 802.11n-draft/g/b/a wireless clients • 10/100/1000 Ethernet
<p>Web-based Configuration Utility Requirements</p>	<p>Computer with the following:</p> <ul style="list-style-type: none"> • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter <p>Browser Requirements:</p> <ul style="list-style-type: none"> • Internet Explorer 6.0 or higher • Mozilla 1.7.12 or higher • Firefox 1.5 or higher • Safari 1.0 or higher (with Java 1.3.1 or higher) • Flock 0.7.14 or higher • Opera 6.0 or higher <p>Windows® Users: Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.</p>
<p>CD Installation Wizard Requirements</p>	<p>Computer with the following:</p> <ul style="list-style-type: none"> • Windows® XP with Service Pack 2 or Vista™ • An installed Ethernet adapter • CD-ROM drive

Introduction

TOTAL PERFORMANCE

Combines award winning router features and IEEE 802.11a/Draft 802.11n wireless technology to provide the best wireless performance

TOTAL SECURITY

The most complete set of security features including Active Firewall and WPA2 to protect your network against outside intruders

TOTAL COVERAGE

Provides greater wireless signal rates even at farther distances for best-in-class Whole Home Coverage.

ULTIMATE PERFORMANCE

The D-Link Xtreme N™ Gaming Router (DGL-4500) is a draft 802.11n/802.11a compliant device that delivers real world performance of up to 14x faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the Xtreme N™ Gaming Router to a cable or DSL modem and share your high-speed Internet access with everyone on the network. In addition, this Router includes GameFuel engine that keeps online gaming smooth and responsive, providing a better Internet experience.

EXTENDED WHOLE HOME COVERAGE

Powered by Xtreme N™ technology, this high performance router provides superior Whole Home Coverage while reducing dead spots. The Xtreme N™ Gaming Router is designed for use in bigger homes and for users who demand higher performance networking. Add a Xtreme N™ notebook or desktop adapter and stay connected to your network from virtually anywhere in your home.

TOTAL NETWORK SECURITY

The Xtreme N™ Gaming Router supports all of the latest wireless security features to prevent unauthorized access, be it from over the wireless network or from the Internet. Support for WPA and WEP standards ensure that you'll be able to use the best possible encryption method, regardless of your client devices. In addition, this Xtreme N™ Gaming Router utilizes dual active firewalls (SPI and NAT) to prevent potential attacks from across the Internet.

* Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g and Draft 802.11n 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.

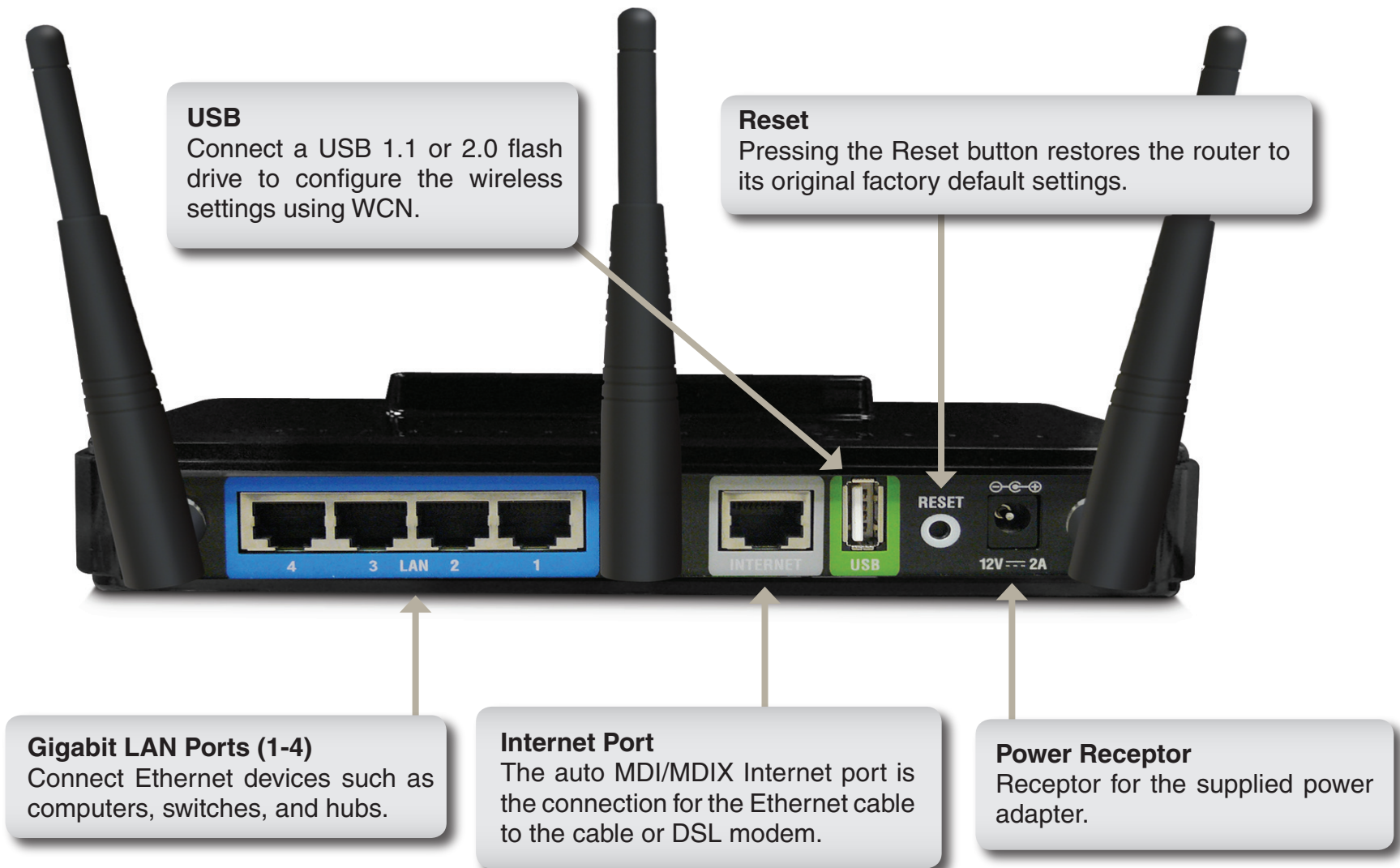
Features

- **Faster Wireless Networking** - The DGL-4500 provides up to 300Mbps* wireless connection with other 802.11n 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 802.11n wireless router gives you the freedom of wireless networking at speeds 14x faster than 802.11g.
- **Compatible with 802.11a, 802.11b, and 802.11g Devices** - The DGL-4500 is still fully compatible with the IEEE 802.11a/b/g standard, so it can connect with existing 802.11a/b/g PCI, USB and Cardbus adapters.
- **OLED Display** - The OLED display screen provides information regarding the router.
- **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 DGL-4500 can pass through VPN sessions. It supports multiple and concurrent IPsec and PPTP sessions, so users behind the DGL-4500 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DGL-4500 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 802.11a, 802.11g, and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and

Hardware Overview

Connections



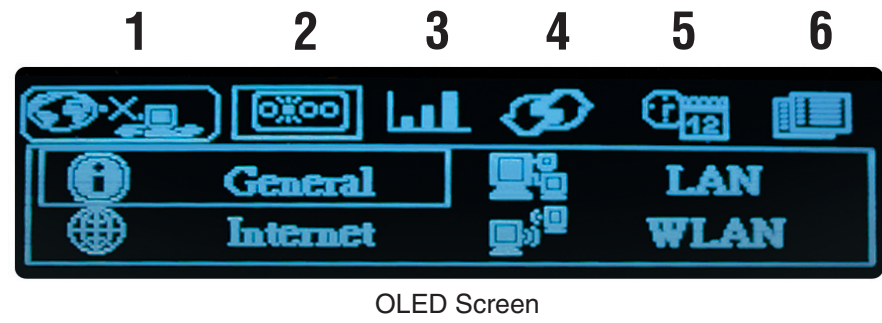
Hardware Overview

LEDs



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

OLED Screen
Displays information regarding the router.



OLED Screen

1	WAN	Displays Internet connectivity.
2	Menu	Select to display the OLED main menu.
3	Performance	Select to display the and data of the LAN, WAN, and wireless connections.
4	WPS	Displays the WPS status.
5	Date/Time	Displays the routers date and time.
6	DHCP	Displays the DHCP status.

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

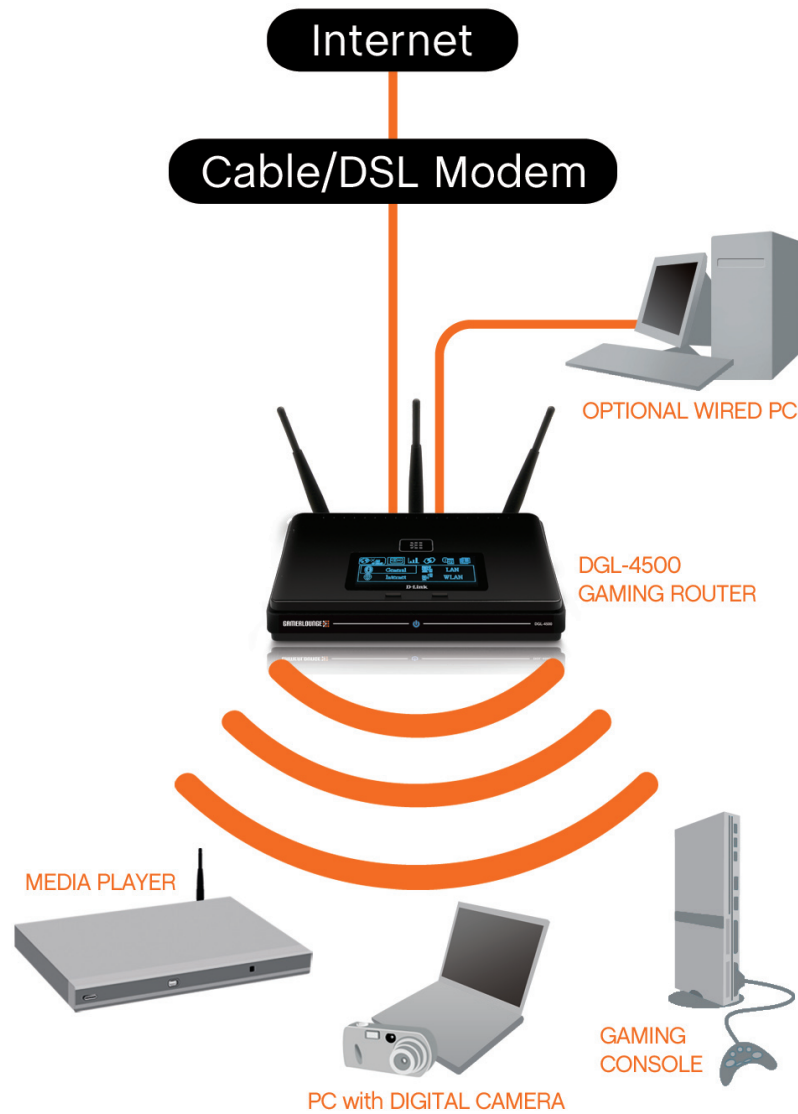
- Please configure the router with the computer that was last connected directly to your modem.
- You can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Internet 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.
- When running the Setup Wizard from the D-Link CD, make sure the computer you are running the CD from is connected to the Internet and online or the wizard will not work. If you have disconnected any hardware, re-connect your computer back to the modem and make sure you are online.

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.

Network Diagram



Getting Started

The DGL-4500 includes a Quick Router Setup Wizard CD. Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process. You may manually configure your router without the wizard. Refer to the next page to manually setup your router.

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

If the CD autorun function does not automatically start on your computer, go to **Start > Run**. In the run box type “**D:\DGL4500.exe**” (where **D:** represents the drive letter of your CD-ROM drive).

When the autorun screen appears, click **Install Router** and follow the on-screen instructions.



Connect to Cable/DSL/Satellite Modem

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

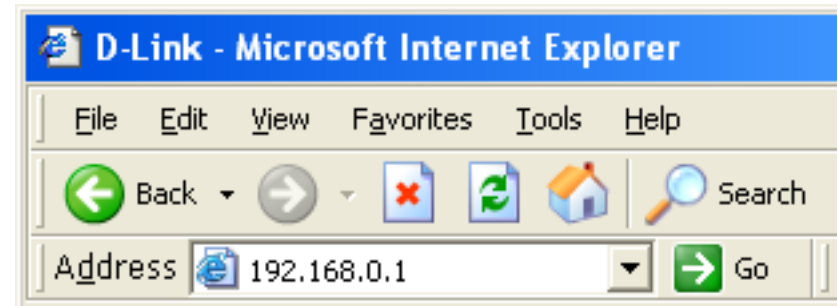
1. Place the router in an open and central location. Do not plug the power adapter into the router.
2. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.
3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Internet 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. Refer to the next page to configure your router.

Configuration

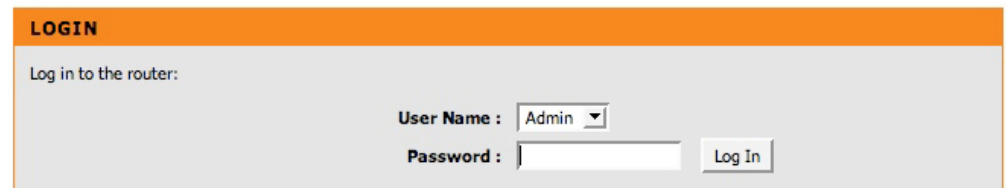
This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

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).



Select **Admin** from the drop-down menu and then enter your password. Leave the password blank by default.



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

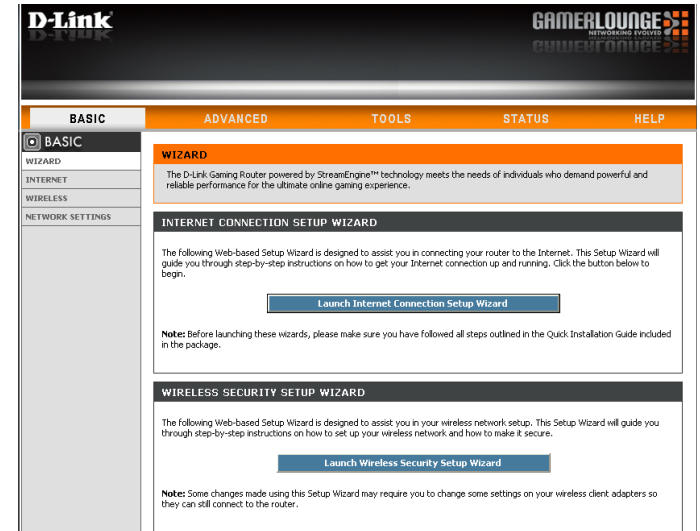
Setup Wizard

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

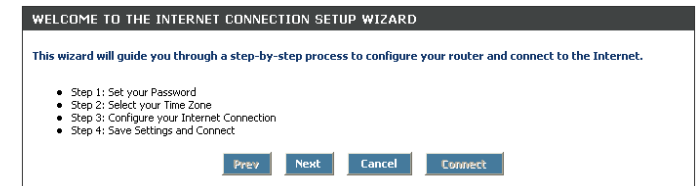
If you want to configure your wireless settings, click **Launch Wireless Security Setup Wizard** and skip to page 65.

You may click **Setup Wizard** to quickly configure your router.

If you want to enter your settings without running the wizard, click **Manual Configuration** and skip to page 17.



Click **Next** to continue.



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

STEP 1: SET YOUR PASSWORD

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

Password: [masked]
Verify Password: [masked]

Prev Next Cancel Connect

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

STEP 2: SELECT YOUR TIME ZONE

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

Time Zone: (GMT-08:00) Pacific Time (US/Canada), Tijuana

Prev Next Cancel Connect

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

STEP 3: CONFIGURE YOUR INTERNET CONNECTION

Your Internet Connection could not be detected, please select your Internet Service Provider (ISP) from the list below. If your ISP is not listed; select the "Not Listed or Don't Know" option to manually configure your connection.

Not Listed or Don't Know

If your Internet Service Provider was not listed or you don't know who it is, please select the Internet connection type below:

- DHCP Connection (Dynamic IP Address)**
Choose this if your Internet connection automatically provides you with an IP Address. Most Cable Modems use this type of connection.
- Username / Password Connection (PPPoE)**
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Username / Password Connection (PPTP)**
PPTP client.
- Username / Password Connection (L2TP)**
L2TP client.
- Static IP Address Connection**
Choose this option if your Internet Setup Provider provided you with IP Address information that has to be manually configured.
- BigPond**
BigPond Cable (Australia)

Prev Next Cancel Connect

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.

DHCP CONNECTION (DYNAMIC IP ADDRESS)

To set up this connection, please make sure that you are connected to the 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 router.

MAC Address: (optional)

Host Name:

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

SET USERNAME AND PASSWORD CONNECTION (PPPoE)

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

Address Mode: Dynamic IP Static IP

IP Address:

User Name:

Password:

Verify Password:

Service Name: (optional)

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

SET USERNAME AND PASSWORD CONNECTION (PPTP)

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

Address Mode: Dynamic IP Static IP

PPTP IP Address:

PPTP Subnet Mask:

PPTP Gateway IP Address:

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

User Name:

Password:

Verify Password:

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

SET USERNAME AND PASSWORD CONNECTION (L2TP)

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

Address Mode: Dynamic IP Static IP

L2TP IP Address: 0.0.0.0

L2TP Subnet Mask: 255.255.255.0

L2TP Gateway IP Address: 0.0.0.0

L2TP Server IP Address (may be same as gateway): 0.0.0.0

User Name:

Password:

Verify Password:

Prev Next Cancel Connect

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

SET STATIC IP ADDRESS CONNECTION

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

IP Address: 0.0.0.0

Subnet Mask: 255.255.255.0

Gateway Address: 0.0.0.0

Primary DNS Address: 0.0.0.0

Secondary DNS Address: 0.0.0.0

Prev Next Cancel Connect

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.

SETUP COMPLETE!

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

Prev Next Cancel Connect

Manual Configuration

Dynamic (Cable)

My Internet Connection: Select **Dynamic IP (DHCP)** 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.

Use Unicasting: Check the box if you are having problems obtaining an IP address from your ISP.

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

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

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

The screenshot shows the D-Link router's web interface. The top navigation bar includes 'BASIC', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. The left sidebar has 'BASIC' selected, with sub-items for 'WIZARD', 'INTERNET', 'WIRELESS', and 'NETWORK SETTINGS'. The main content area is titled 'WAN' and contains the following sections:

- 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 client software. There are 'Save Settings' and 'Don't Save Settings' buttons.
- INTERNET CONNECTION TYPE:** A section with the instruction 'Choose the mode to be used by the router to connect to the Internet.' A dropdown menu shows 'My Internet Connection is : Dynamic IP (DHCP)'.
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE :** A section with the instruction 'Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password.' It includes input fields for:
 - Host Name
 - Use Unicasting: (compatibility for some DHCP Servers)
 - Primary DNS Server: 0.0.0.0
 - Secondary DNS Server: 0.0.0.0
 - MTU: 1500 (bytes) MTU default = 1500
 - MAC Address: 00:00:00:00:00:00
 A 'Clone Your PC's MAC Address' button is located below the MAC Address field.

Internet Setup

PPPoE (DSL)

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

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

Address Mode: Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

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

User Name: Enter your PPPoE user name.

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

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

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

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

DNS Addresses: 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.

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

The screenshot shows the D-Link router's configuration interface for PPPoE (DSL). The 'WAN' section is active, and the 'Internet Connection' type is set to 'PPPoE (Username / Password)'. The 'PPPoE INTERNET CONNECTION TYPE' section contains the following fields and values:

- Address Mode:** Dynamic IP (selected), Static IP
- IP Address:** 0.0.0.0
- Username:** d-link@bcbglobal.net
- Password:** [Redacted]
- Verify Password:** [Redacted]
- Service Name:** [Optional field]
- Reconnect Mode:** Always on (selected), On demand, Manual
- Maximum Idle Time:** 00 (minutes, 0=infinite)
- Primary DNS Server:** 0.0.0.0
- Secondary DNS Server:** 0.0.0.0
- MTU:** 1492 (bytes) MTU default = 1492
- MAC Address:** 00:00:00:00:00:00

A 'Clone Your PC's MAC Address' button is located at the bottom of the form.

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.

Address Mode: Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

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

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

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

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

Username: Enter your PPTP username.

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

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

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

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

D-Link **GAMERLOUNGE**
NETWORKING EVOLVED

BASIC **ADVANCED** **TOOLS** **STATUS** **HELP**

BASIC
WIZARD
INTERNET
WIRELESS
NETWORK SETTINGS

WAN

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 : PPTP (Username / Password)

PPTP INTERNET CONNECTION TYPE :

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

Address Mode: Dynamic IP Static IP

PPTP IP Address: 0.0.0.0

PPTP Subnet Mask: 255.255.255.0

PPTP Gateway IP Address: 0.0.0.0

PPTP Server IP Address: 0.0.0.0

Username: _____

Password: •••••

Verify Password: •••••

Reconnect Mode: Always on On demand Manual

Maximum Idle Time: 5 (minutes, 0=infinite)

Primary DNS Server: 0.0.0.0

Secondary DNS Server: 0.0.0.0

MTU: 1400 (bytes) MTU default = 1400

MAC Address: 00:00:00:00:00:00

[Clone Your PC's MAC Address](#)

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

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