D-Link®

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User Manual

Wireless N300 ADSL2+ Modem Router

DSL-124

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
1.00	October 13, 2016	• Release for revision I1

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Package Contents

Wireless N300 ADSL2+ Modem Router

Ethernet Cable

Power Adapter

ADSL Telephone Cable

Quick Installation Guide

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

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

System Requirements

Network Requirements	• Wired 10/100 Ethernet Devices/Computers or Wireless Ethernet 802.11 n/g/b Devices/Computers • A DSL enabled Internet Connection with a subscription to an Internet Service Provider
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 8 or higher • Firefox 20 or higher • Safari 4 or higher • Chrome 25 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.

Introduction

The DSL-124 Wireless N300 ADSL2+ Modem Router is a versatile, high-performance router for homes and small offices. With integrated ADSL2/2+ supporting up to 24 Mbps download speeds, firewall protection, Quality of Service (QoS), 802.11n wireless LAN and 4 Ethernet switch ports, this router provides all the functions that a home or small office needs to establish a secure and high-speed link to the outside world.

High-speed ADSL2/2+ Internet Connection - The latest ADSL2/2+ standards provide Internet transmission of up to 24 Mbps downstream, 1 Mbps upstream.

High-performance Wireless - Embedded 802.11n technology for high-speed wireless connection, complete compatibility with 802.11b/g wireless devices.

Ultimate Wireless Connection with Maximum Security - This router maximizes wireless performance by connecting to computer interfaces and staying connected from virtually anywhere at home and in the office. The router can be used with 802.11b/g/n wireless networks to enable significantly improved reception. It supports WPA/WPA2 and WEP for flexible user access security and data encryption methods.

Firewall Protection & QoS - Security features prevent unauthorized access to your home and office network, be it from the wireless devices or from the Internet. The router provides firewall security using Stateful Packet Inspection (SPI) and hacker attack logging for Denial of Service (DoS) attack protection. SPI inspects the contents of all incoming packet headers before deciding what packets are allowed to pass through. Router access control is provided with packet filtering based on port and source/destination MAC/IP addresses. For Quality of Service (QoS), the router supports multiple priority queues to enable a group of home or office users to experience the benefit of smooth network connection of inbound and outbound data without concern for traffic congestion. This QoS feature allows users to enjoy high-speed ADSL transmission for applications such as VoIP and streaming multimedia over the Internet.

* Maximum wireless signal rate derived from IEEE Standard 802.11b, 802.11g, and 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 DSL-124 provides up to 300 Mbps* 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.

- **Compatible with 802.11b and 802.11g Devices** - The DSL-124 is still fully compatible with the IEEE 802.11b and g standards, so you can use keep your existing 802.11b and g devices.

- **Precise ATM Traffic Shaping** - Traffic shaping is a method of controlling the flow rate of ATM data cells. This function helps to establish Quality of Service for ATM data transfer.

- **High Performance** - Very high rates of data transfer are possible with the router-providing up to 24 Mbps downstream for ADSL2+.

- **Full Network Management** - The DSL-124 incorporates SNMP (Simple Network Management Protocol) support for web-based management and text-based network management via a Telnet connection.

- **Easy Installation** - The DSL-124 can be configured and managed easily using a web-based UI. Any common web browser software can be used to manage the router.

- **IPv6 Connection Support** - Compatible with IPv6 networks, the DSL-124 provides several connection types: Link-local, Static IPv6, DHCPv6, Stateless Autoconfiguration, PPPoE, IPv6 in IPv4 Tunnel, and 6to4.

* Maximum wireless signal rate derived from IEEE Standard 802.11b, 802.11g, and 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.

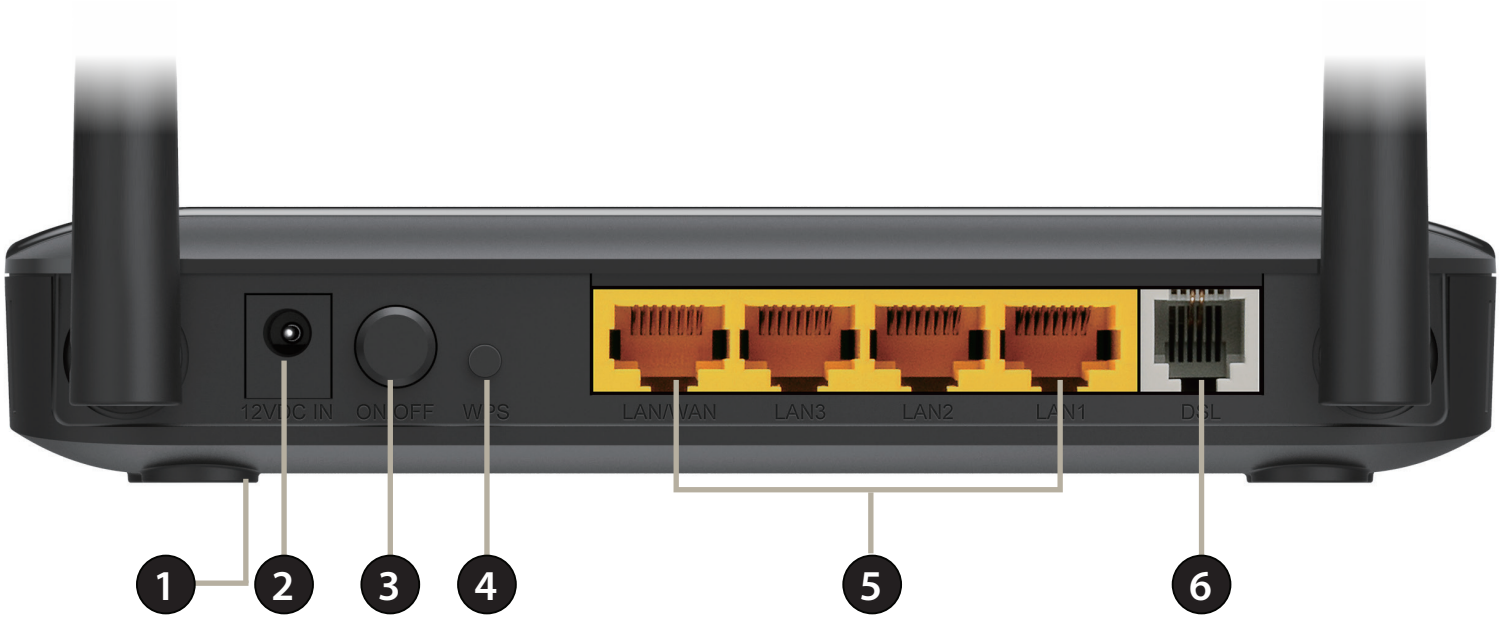
Hardware Overview

Front LED Panel

1	Power LED	A solid green light indicates the unit is powered on. A red light indicates device malfunction.
2	DSL LED	A solid green light indicates a proper connection to the ADSL enabled telephone line.
3	Internet	A solid green light indicates a proper connection to a broadband service. A red light indicates that IP assignment has failed.
4	LAN LEDs 1-4	A solid green light indicates a connection to a device. The light will blink during data transmission.
5	WLAN LED	A solid green light indicates that the Wi-Fi is ready.
6	WPS LED	The light will blink during the WPS process.

Hardware Overview

Back



1	Reset Button	To reset the DSL-124 to the default settings, insert a paperclip into the hole on the bottom of the device located near the label and wait several seconds.
2	Power Connector	Connector for the supplied power adapter.
3	Power Button	Press to power the DSL-124 on or off.
4	WPS Button	Press to start the WPS process and automatically create a secure connection to a WPS client.
5	LAN Ports (1-4)	Connects Ethernet devices such as computers, switches, storage (NAS) devices and game consoles.
6	DSL Port	Connects to an DSL-enabled telephone line.

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, attic, or garage.

Note: This installation section is written for users who are setting up their home Internet service with the DSL-124 Wireless N300 ADSL2+ Modem Router for the first time. If you are replacing an existing DSL modem and/or router, you may need to modify these steps.

Before you Begin

- Make sure to have your DSL service information provided by your Internet Service Provider handy. This information is likely to include your DSL account's Username and Password. Your ISP may also supply you with additional WAN configuration settings which are necessary to establish a connection. This information may include the connection type (DHCP IP, Static IP, PPPoE, or PPPoA) and/or ATM PVC details.

- If you are connecting a considerable amount of networking equipment, it may be a good idea to take the time to label each cable or take a picture of your existing setup before making any changes.

- We suggest setting up your DSL-124 from a single device and verifying that it is connected to the Internet before connecting additional devices.

- If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE connection software such as WinPoET, BroadJump, or EnterNet 300 from your computer as the DSL-124 will be providing this functionality.

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:

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 1-30 meters (3-90 feet). Position your devices so that the number of walls or ceilings is minimized.

Be aware of the direct line between network devices. A wall that is .5 meters (1.5 feet thick), at a 45-degree angle appears to be almost 1 meter (3 feet) thick. At a 2-degree angle it looks over 14 meters (42 feet) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

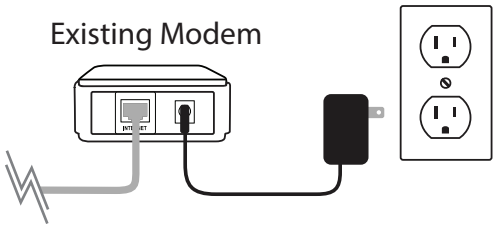
Building materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

Keep your product away (at least 1-2 meters or 3-6 feet) from electrical devices or appliances that generate RF noise.

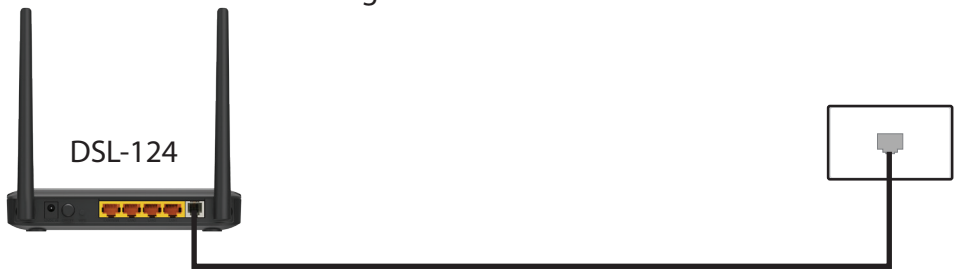
If you are using 2.4 GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4 GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Manual Setup

1. Turn off and unplug your existing DSL broadband modem. This is required.

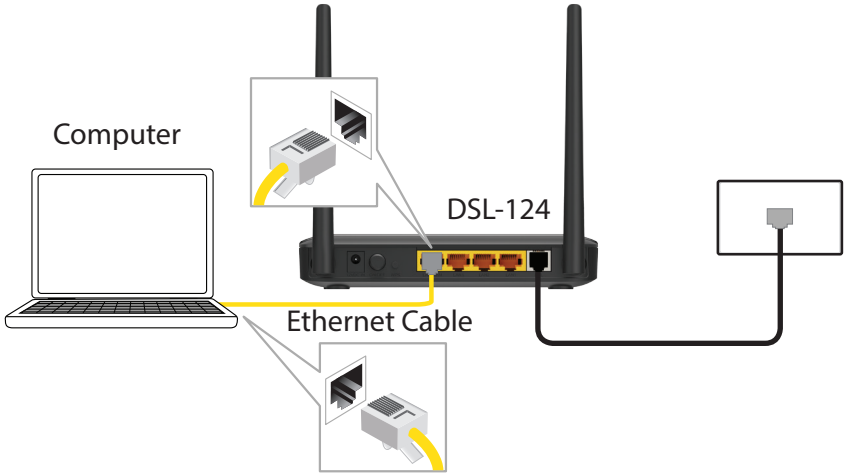


2. Position your DSL-124 close to a telephone outlet which provides DSL service. Place the router in an open area of your intended work area for better wireless coverage.



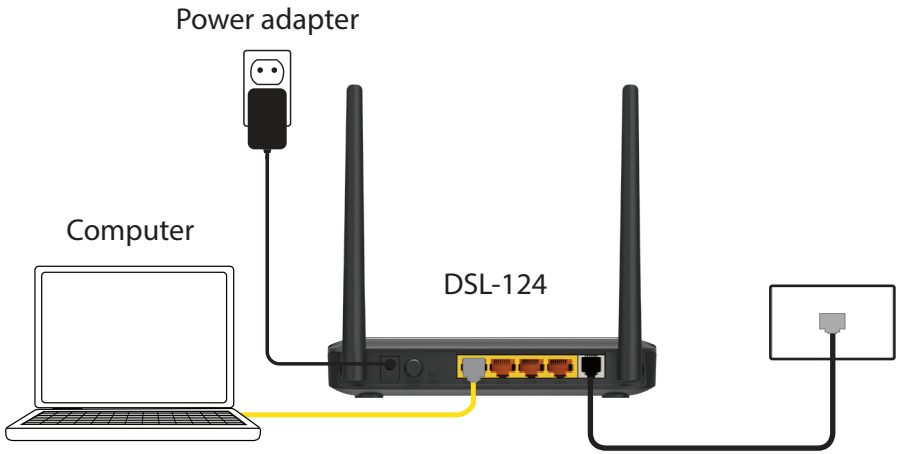
3. Connect the included ADSL Telephone Cable from a telephone outlet to the DSL port on your DSL-124.

4 If you wish to use a wired connection, connect the Ethernet cable from a LAN port of the DSL-124 to the Ethernet port on your computer.



5 Plug the power adapter into your DSL-124 and connect to an available power outlet or surge protector.

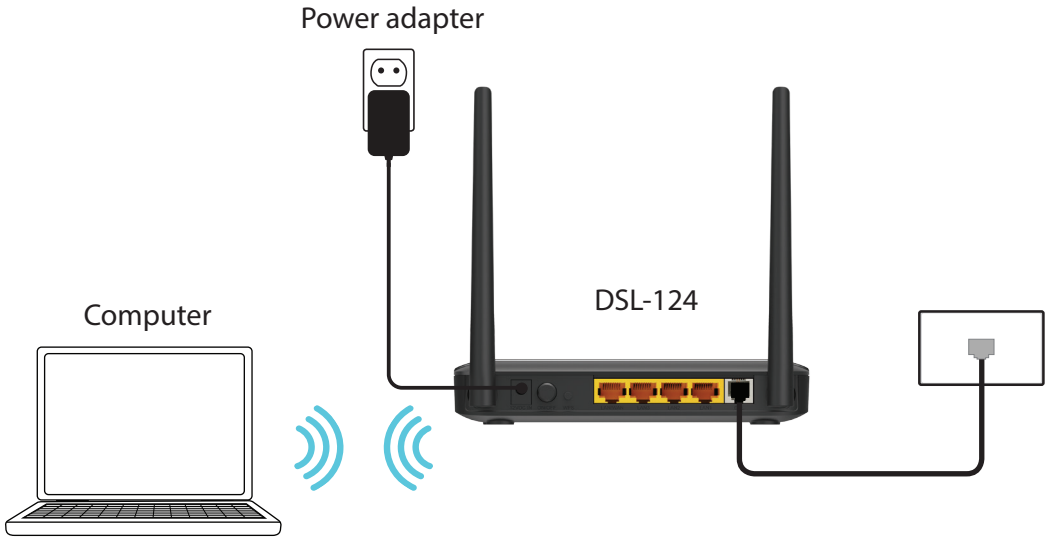
Caution: *- Only use the included power adapter with this product.*



6 Press the power button and verify that the power LED is lit. Allow 1 minute for the router to boot up.

DSL-124

If connecting to the DSL-124 wirelessly, access the wireless utility on your computer or mobile device. Scan for available Wi-Fi networks (SSID). Select and join the Wi-Fi network printed on the label on the bottom of your DSL-124.



Getting Started

There are two different ways you can configure your router to connect to the Internet and connect to your clients:

- **Web-based Setup Wizard** - This wizard will launch when you log into the DSL-124 for the first time. Refer to **Web-based Configuration Utility** on page 13.

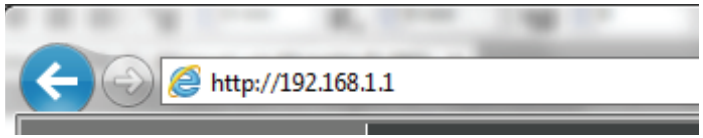
- **Manual Setup** - Log into the DSL-124 and manually configure your it, refer to **Manual Setup** on page 9.

Web-based Configuration Utility

This section will show you how to configure your D-Link DSL-124 using the web-based configuration utility.

If you wish to change the default settings or adjust the configuration of the DSL-124 you may use the web-based configuration utility.

To access the configuration utility, open a web browser such as Internet Explorer and enter **http://192.168.1.1** in the address field.



Type **admin** for the user name and then enter your password. The default password is **admin**.

On your first login, it is recommended that you select **Setup Wizard** page.

If you want to configure the router manually without running the wizard, skip to **Configuration** on page 22.

Wizard

Use the **Setup Wizard** to quickly and easily configure the DSL-124. This wizard is designed to guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

Click the **Setup Wizard** button to continue.

If you want to configure the DSL-124 manually without running the wizard, skip to **Configuration** on page 22.

SETUP WIZARD

The Setup Wizard will guide you through the following steps:

Step 1: Change Device Login Password

Step 2: Set Time and Date

Step 3: Setup Internet Connection

Step 4: Configure Wireless Network

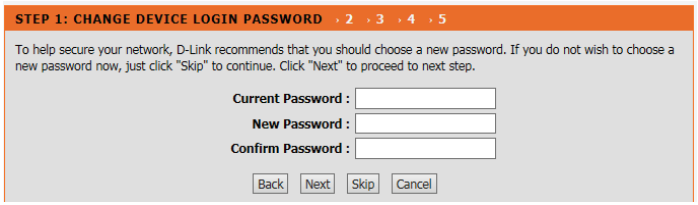
Step 5: Completed and Apply

Click **Next** to begin.

Step 1: Change Device Login Password

This step of the wizard allows you to configure your password settings.
Enter your **Current Password**, Enter a new **Password**, and **Confirm Password** to secure your DSL-124.

Click **Next** to continue. Otherwise, click **Skip** to leave the password unchanged.



Step 2: Set Time and Date

This step of the wizard allows you to configure your Time and Date settings.

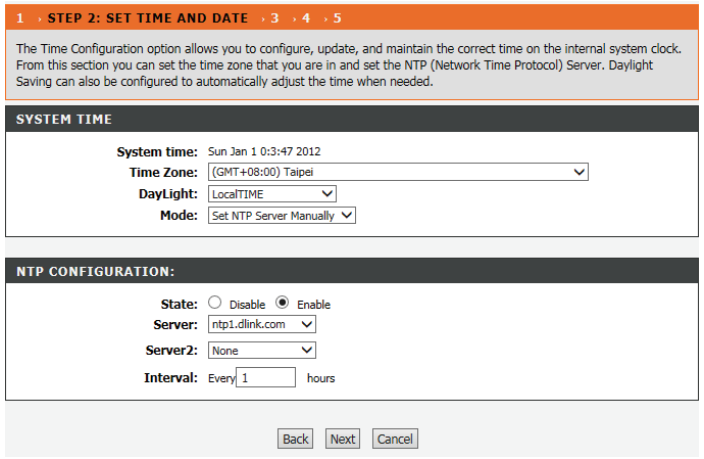
SYSTEM TIME

The current system time is displayed. Select your **Time Zone** from the drop-down menu. From the **Mode** select either **Set NTP Server Manually** or **Copy Computer time.**

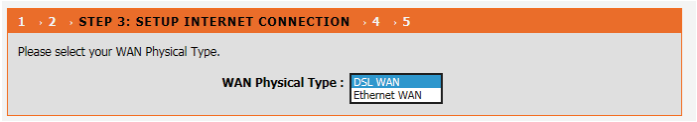
NTP CONFIGURATION:

If necessary, change the Network Time Protocol (NTP) servers or interval.

Click **Next** to continue.



Step 3: Setup Internet Connection



This step of the wizard allows you to configure your Internet connection type. Choose either **DSL WAN** or **Ethernet WAN** from the **WAN Physical Type** drop-down menu.

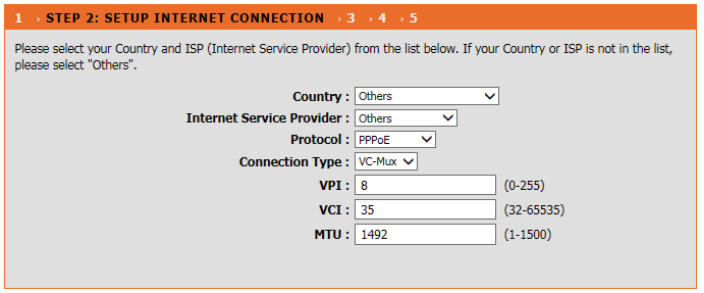
Choose **DSL WAN** if you are connecting your router directly though an RJ-11 cable to your phone jack.

Choose **Ethernet WAN** if you are connecting to an external modem or other Ethernet WAN device.

Note: If you choose Ethernet WAN, make sure your WAN connection is plugged into Port 4.

Step 3: Setup Internet Connection (DSL WAN)

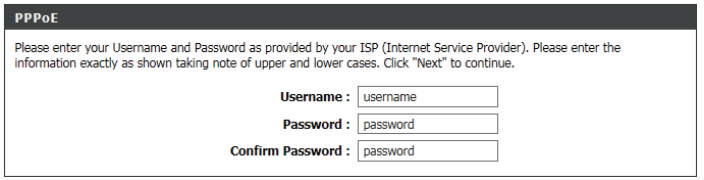
This step of the wizard allows you to configure your DSL WAN Internet connection type. Choose your **Country** and **Internet Service Provider** (ISP) from the drop down menu. The necessary settings will automatically populate. If you cannot find your country or ISP, select **Others**. You will need to enter the connection details, provided by your ISP, manually. Select the **Protocol** used by your ISP: **Dynamic IP, Static IP, PPPoE, PPPoA,** or **Bridge**, along with the **Connection Type**: **VC-MUX** or **LLC** and input the **VPI, VCI,** and **MTU** settings.

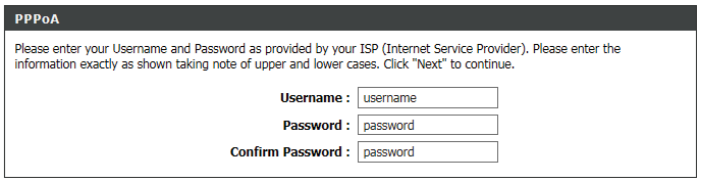


PPPOE/ PPPOA

If you selected **PPPoE** or **PPPoA**, a box will appear to enter your PPPoE/PPPoA username and password. Once you have entered your PPPoE/PPPoA credentials, click **Next** to continue.

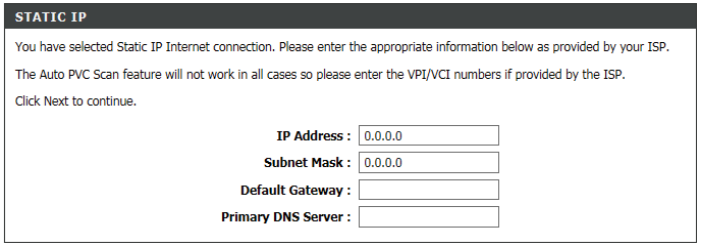
Note: *Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.*





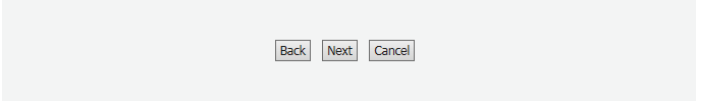
STATIC IP

If you selected **Static IP**, enter your Static IP information as supplied by your ISP. Click **Next** to continue.



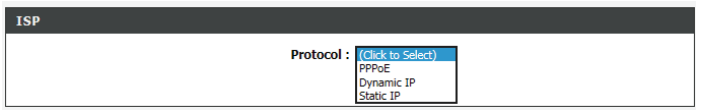
BRIDGE/DYNAMIC

Bridge or Dynamic IP require no additional configuration. Click **Next** to continue.



Step 3: Setup Internet Connection (Ethernet WAN)

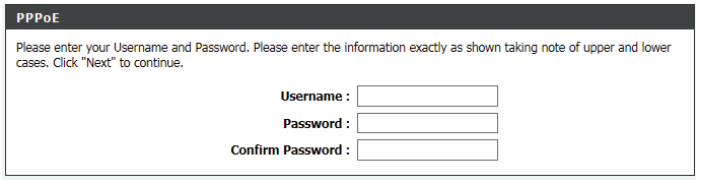
This step of the wizard allows you to configure your DSL WAN Internet connection type. Select the **Protocol** used by your ISP: **PPPoE, Dynamic IP,** or **Static IP.**



PPPOE

If you selected **PPPoE**, a box will appear to enter your PPPoE username and password. Once you have entered your PPPoE credentials, click **Next** to continue.

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



BRIDGE/DYNAMIC

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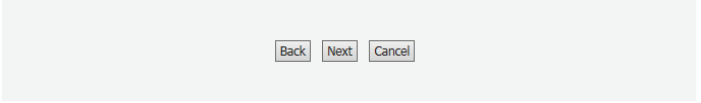

STATIC IP

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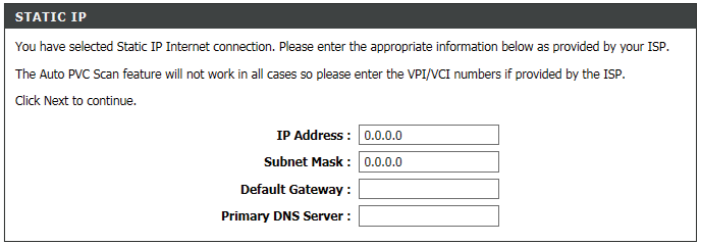


Step 4: Configure Wireless Network

This step of the wizard allows you to configure your Wireless network settings.

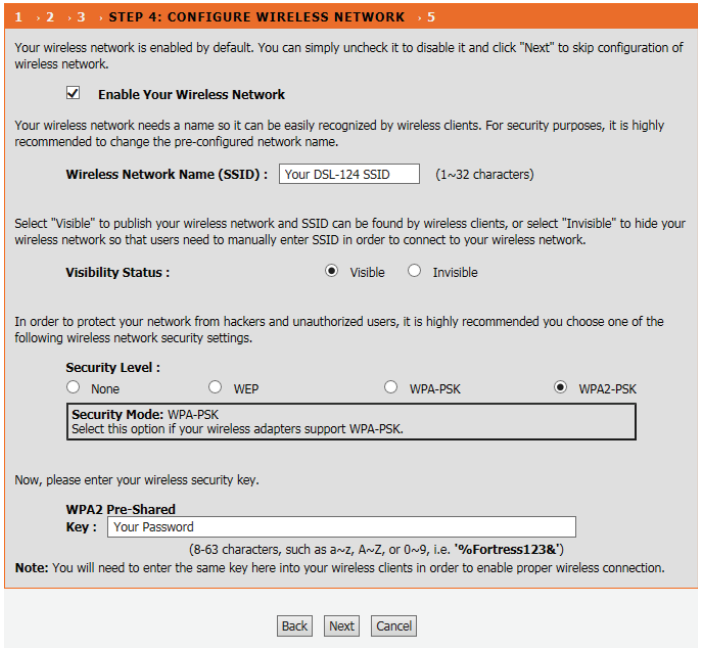
By default, wireless is enabled. If you want to disable the DSL-124's wireless capability, uncheck **Enable Your Wireless Network**.

Under **Wireless Network Name (SSID)** you can change the SSID of your wireless network, for easier identification by wireless clients. If **Visibility Status** is set to **Visible**, this name will show up when a client in range scans for wireless networks. Otherwise, if your network is **Invisible**, clients will have to enter the SSID in order to connect.

Choose the best security level that is compatible with your wireless clients. **WPA2-PSK** is recommended. Unless you chose **None** (this is NOT recommended), you will need to enter a key below.

WPA/WPA2 Pre-Shared Key - Wireless clients requesting a connection with the network will need to enter this key in order to connect.

Click **Next** to continue.

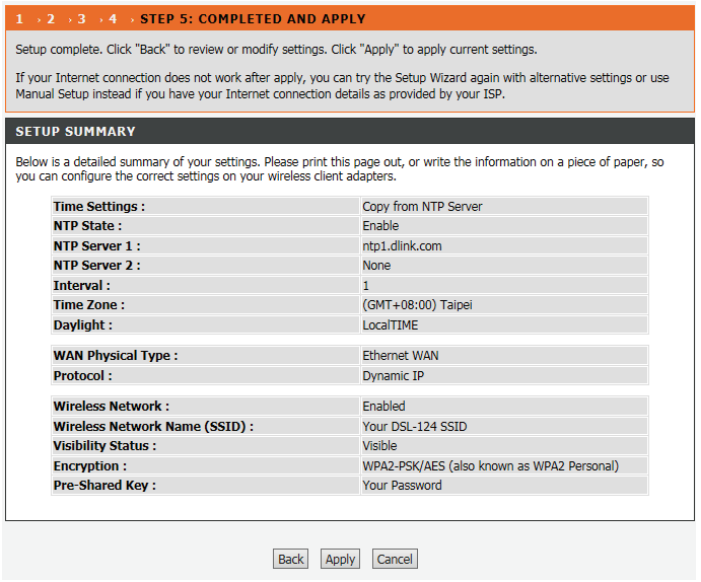


Step 5: Completed and Apply

Congratulations! You have completed the setup of your DSL-124. You will see a summary of the settings you chose. It is recommended that you make a note of this information for future reference.

If you are satisfied with these settings, click **Save** to complete the setup wizard.

Otherwise, click **Back** to return to the previous step(s) or **Cancel** to exit the wizard without saving your changes.



Configuration

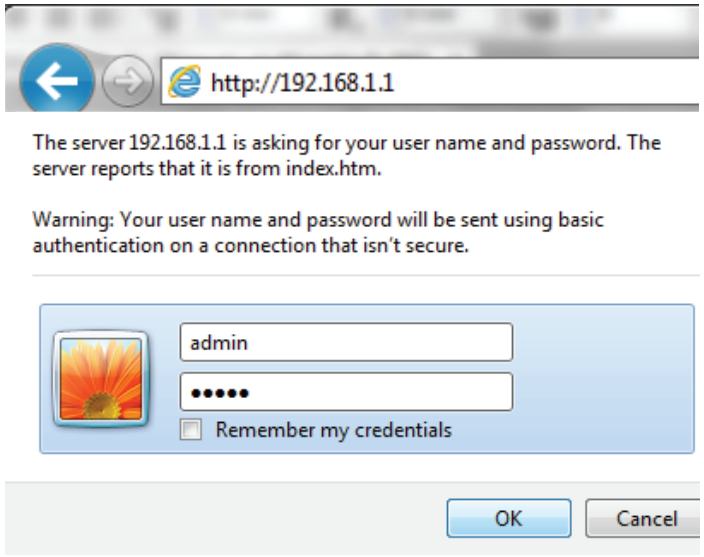
This section will show you how to configure your D-Link wireless router using the web-based configuration utility.

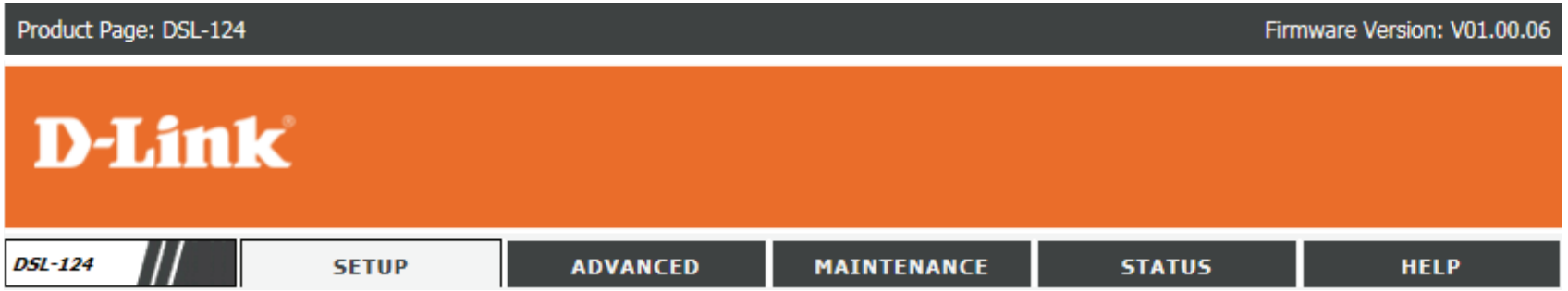
If you wish to change the default settings or adjust the configuration of the DSL-124 you may use the web-based configuration utility.

To access the configuration utility, open a web browser such as Internet Explorer and enter **http://192.168.1.1** in the address field.

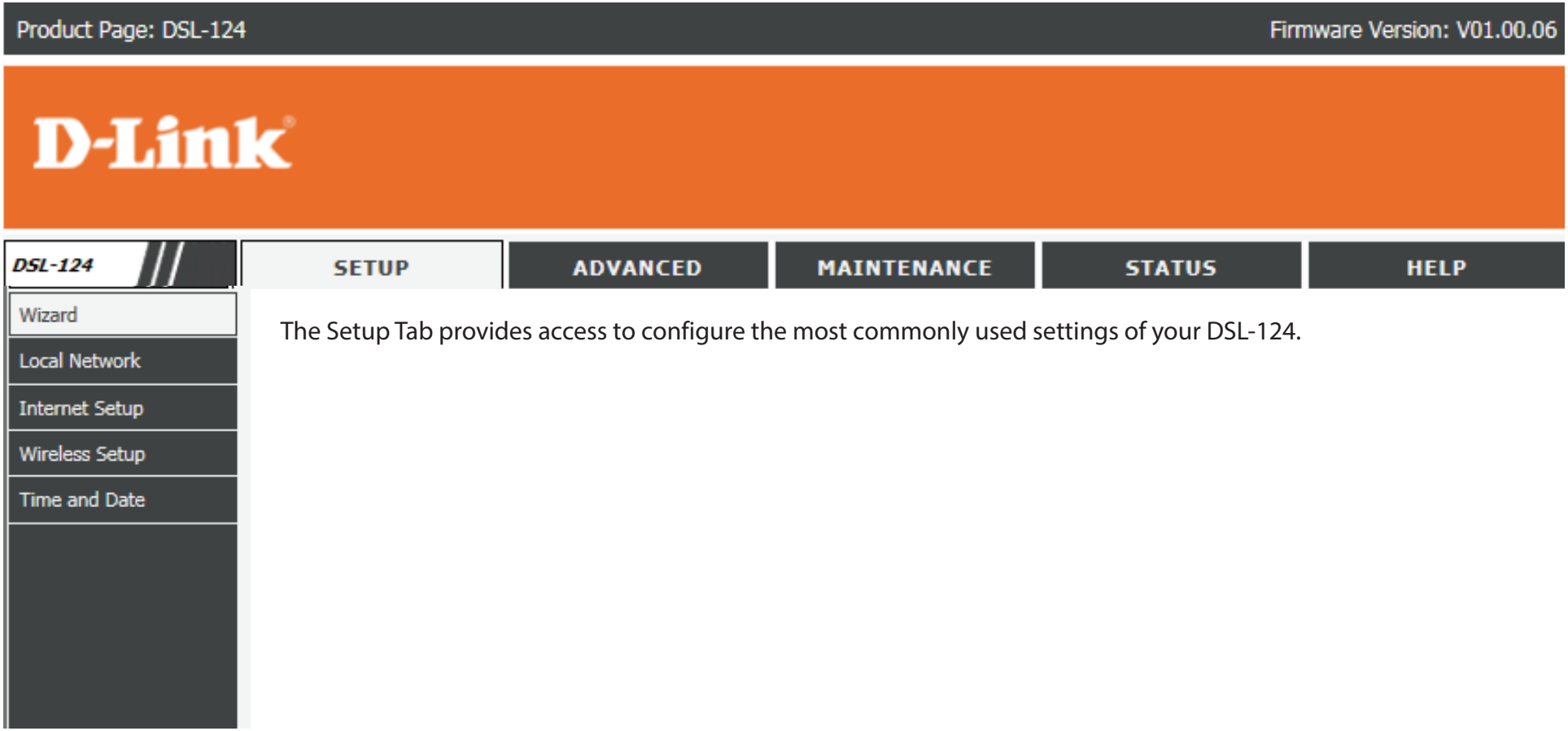
Type **admin** for the user name and then enter your password. The default password is **admin**.

Once logged in you will see the that the user interface is divided into five horizontal tabs, each with a vertical menu bar running along the left side.





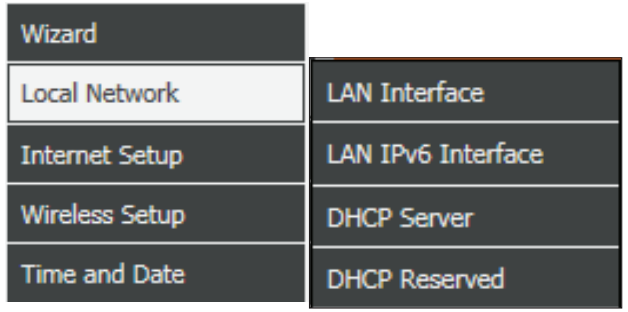
Setup


Product Page: DSL-124
Firmware Version: V01.00.06
D-Link
DSL-124
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
Wizard
Local Network
Internet Setup
Wireless Setup
Time and Date
The Setup Tab provides access to configure the most commonly used settings of your DSL-124.

Local Network

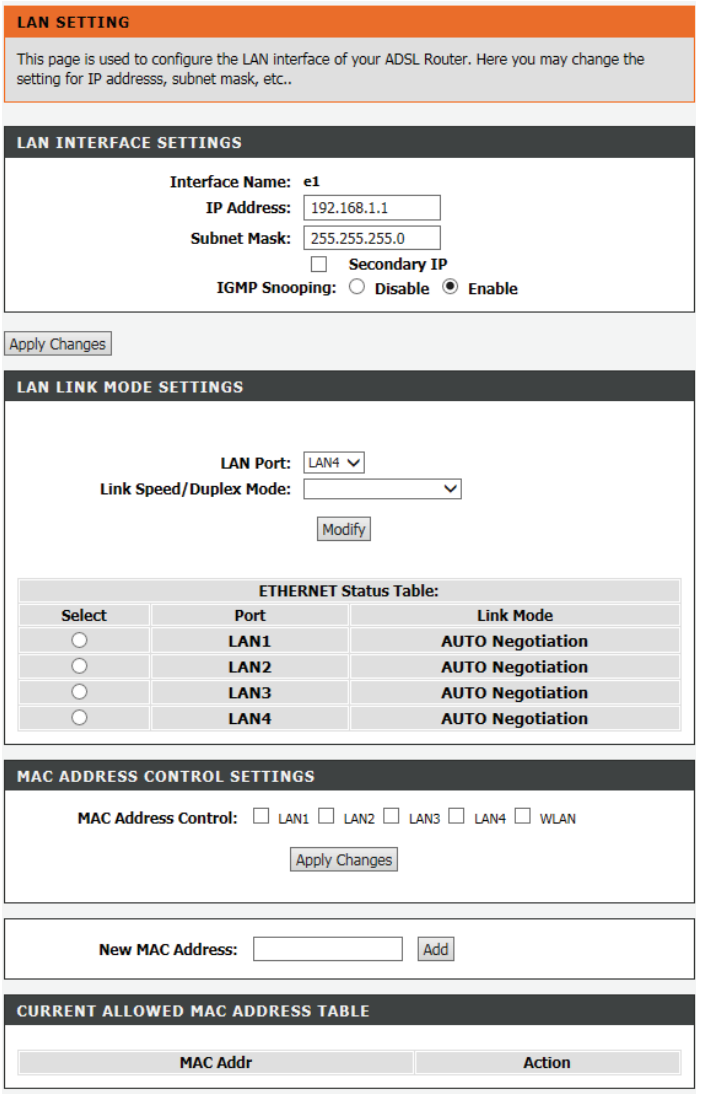
Hover your mouse over the **Local Network** option on the vertical menu bar running along the left side to access:

LAN Interface
LAN IPv6 Interface
DHCP Server
DHCP Reserved



LAN Interface

This optional section allows you to configure the local network and DHCP settings of your device. The DHCP service supplies IP settings to clients configured to automatically obtain IP settings that are connected to the device through the Ethernet port. You may also set static DHCP reservations from this screen. Click **Apply** when you are done.



LAN INTERFACE SETTINGS

Interface Name: **LAN** indicates you are configuring the LAN address settings.

IP Address: Enter the IP address of the DSL-124. The default IP address is **192.168.1.1**. **Note:** If you change the IP address, once you click **Apply** you will need to enter the new IP address in your browser in order to access the configuration utility.

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

Secondary IP: If you wish to add another IP address to use to configure the DSL-124, check this box and enter the IP address and subnet mask.

IGMP Snooping: Check the box to enable Internet Group Management Protocol (IGMP) snooping for extra network traffic security.

LAN LINK MODE SETTINGS

LAN Port: Select the LAN port to modify. The options are **LAN1**, **LAN2**, **LAN3**, and **LAN4**.

Link Speed/ Duplex Mode: Select the link speed and duplex mode. The options are **100 Mbps/ Full Duplex**, **100 Mbps/Half Duplex**, **10 Mbps/Full Duplex**, **10 Mbps/Half Duplex**, or **Auto Negotiation**.

The Ethernet Status Table displays the current Ethernet LAN configuration.

LAN Interface (Continued)

MAC ADDRESS CONTROL SETTINGS

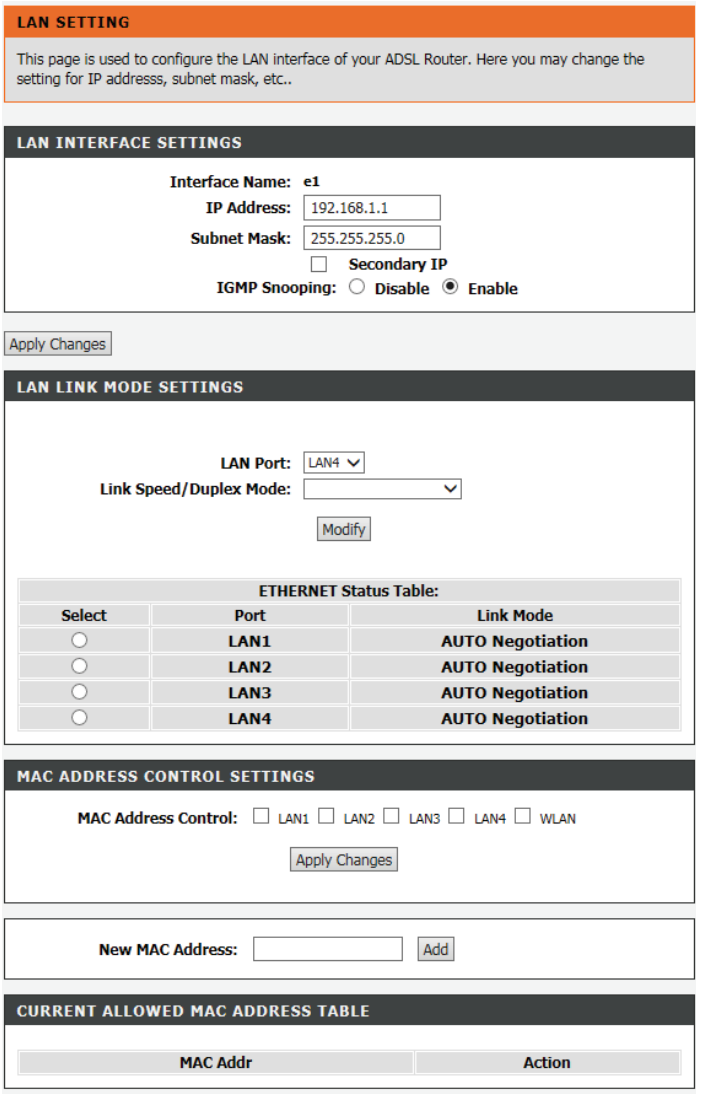
MAC Address Control: Select the LAN interfaces to apply the MAC address control to. The options are **LAN1**, **LAN2**, **LAN3**, **LAN4**, and **WLAN**.

Add your client device MAC addresses below, then select the interfaces to apply MAC Address Control to, and click **Apply Changes**.

New MAC Address: Enter the MAC address of your client devices and click **Add**.

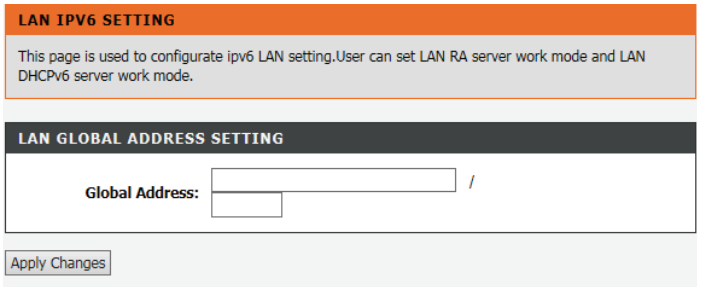
CURRENT ALLOWED MAC ADDRESS TABLE

This list displays the currently allowed devices, listed by their MAC address. If you wish to remove a device, click the **Delete** button. Take care when removing devices so you don't accidentally block your configuring device.



IPv6 Local Network

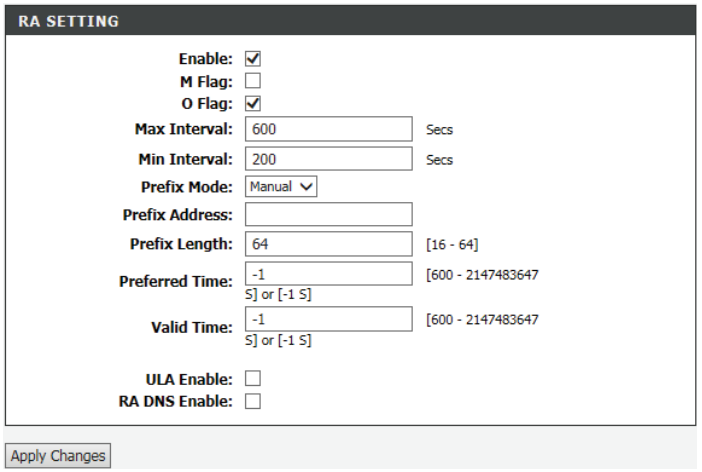
This section allows you to configure your IPv6 local network settings.



LAN GLOBAL ADDRESS SETTING

Global Address Enter your IPv6 global address.

Click **Apply Changes** when you are done.



RA SETTING

Enable: Check this box to enable Router Advertisement.

M Flag: Check this box to set the managed address configuration flag to 1.

O Flag: Check this box to set the other flag to 1.

Max Interval: Set the maximum interval between each router advertisement message.

Min Interval: Set the minimum interval between each router advertisement message.

Prefix Mode: Select **Auto** or **Manual** and enter your prefix address and length.

The following settings are available if **Prefix Mode** is set to **Manual**:

Prefix Address: Enter the prefix address.

Prefix length: Enter the prefix length.

Preferred Time: Enter the preferred amount of time the address is used for.

Valid Time: Enter the amount of time the address is valid for.

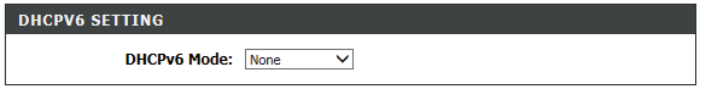
IPv6 Local Network (continued)

ULA Enable: Check this box to enable ULA.

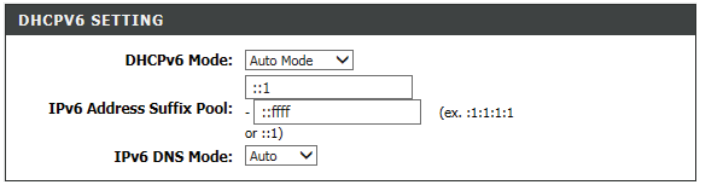
RA DNS Enable: Check this box to enable router advertisement DNS.

Click **Apply Changes** when you are done.

DHCPV6 SETTING

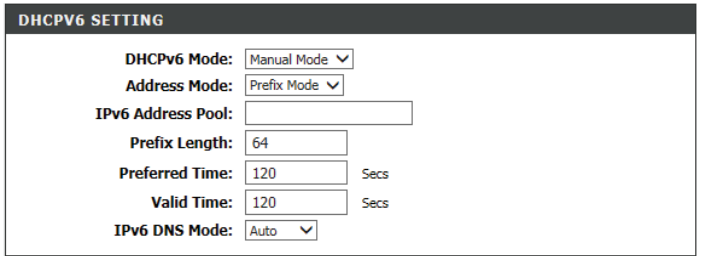


DHCPv6 Mode: Choose the desired DHCPV6 mode **None**, **Auto Mode**, or **Manual Mode**.



The following setting are available if **DHCPv6 Mode** is set to **Auto Mode**:

IPv6 Address Suffix Pool: Enter the IPv6 address suffix pool range.

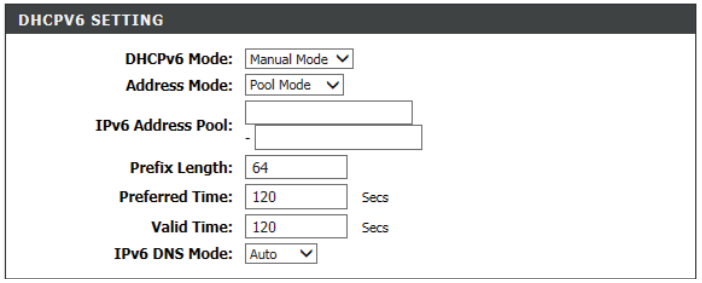


The following settings are available if **DHCPv6 Mode** is set to **Manual Mode**:

Address Mode: Select either **Prefix Mode** or **Pool Mode**.

The following settings are available if **Address Mode** is set to **Prefix Mode:**

IPv6 Address Pool: Enter the IPv6 address prefix.



The following settings are available if **Address Mode** is set to **Pool Mode**:

IPv6 Address Pool: Enter the IPv6 address pool range.

IPv6 Local Network (continued)

Prefix length: Enter the prefix length.

Preferred Time: Enter the preferred amount of time the address is used for.

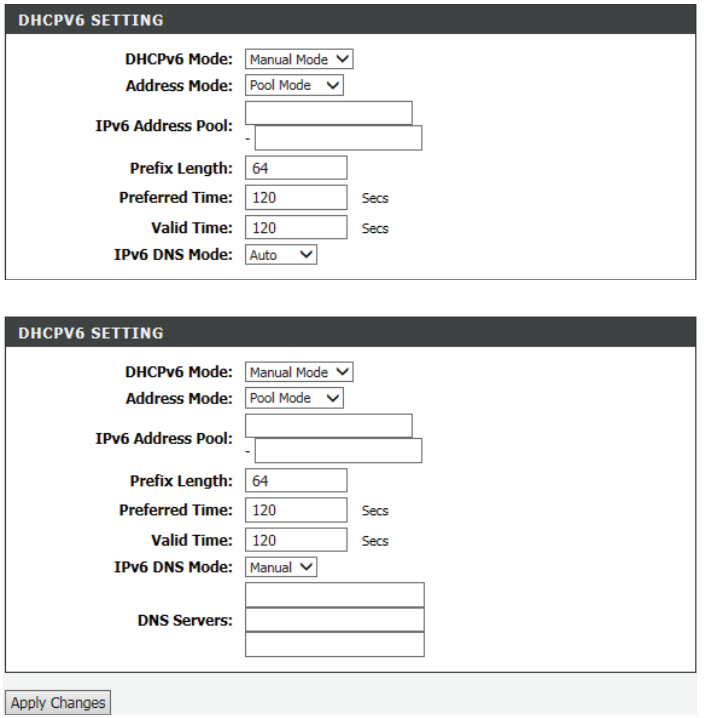
Valid Time: Enter the amount of time the address is valid for.

IPv6 DNS Mode: Select either **Auto** or **Manual**.

The following settings are available if **IPv6 DNS Mode** is set to **Manual**:

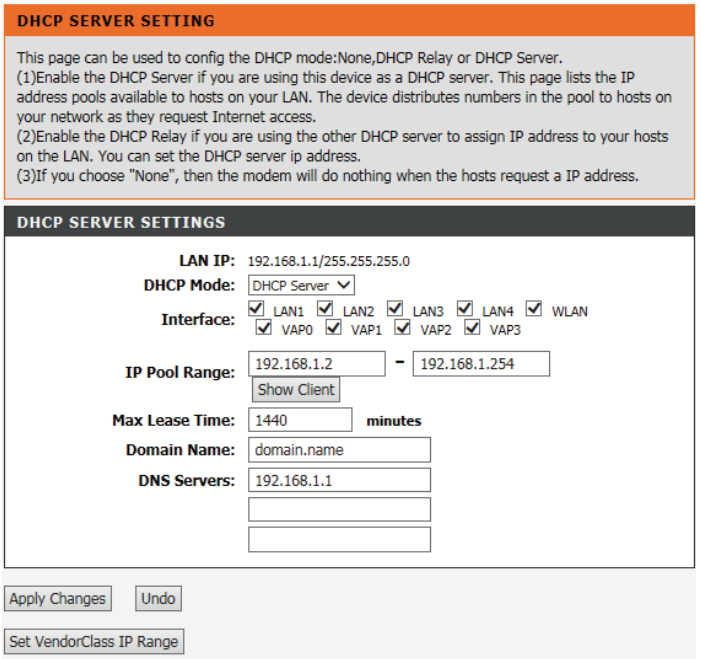
DNS Servers: Enter up to three IPv6 DNS servers.

Click **Apply Changes** when you are done.



DHCP Server

This optional section allows you to configure the DHCP settings of your device. The DHCP service supplies IP settings to clients configured to automatically obtain IP settings that are connected to the device through the Ethernet port. Click **Apply** when you are done.



DHCP SERVER SETTINGS

LAN IP: The current Router LAN IP and Subnet mask are displayed.

DHCP Server: By default, DHCP is enabled. Select **None** to disable the DHCP server. Select **Relay** to enable DHCP relay for managing multiple virtual LANs (VLANs). Selecting **Relay** will prompt you to enter the IP address of the relay server.

Interface Allows you to specify which interfaces to apply your DHCP settings to.

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

LAN IP: The current Router LAN IP and Subnet mask are displayed.

DHCP Server: By default, DHCP is enabled. Select **None** to disable the DHCP server.

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

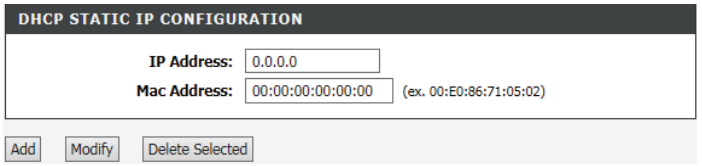
Note: VendorClass IP Range creation and DHCP options are advanced features beyond the scope of this manual.

DHCP Reserved

DHCP Reservation allows you to reserve IP addresses for specific machines based on their unique hardware MAC addresses. During DHCP IP address assignment, these devices will receive the same IP address. This is particularly useful if you run servers on your network.

Click **Apply Changes** when you are done.

DHCP STATIC IP CONFIGURATION



IP Address: Enter the IP address you want to assign to the computer or device. This IP address must be within the DHCP IP address range.

MAC Address: Enter the MAC address of the computer or device you wish to reserve an IP for.

After inputting an IP address and the associated MAC address, click **Add**.

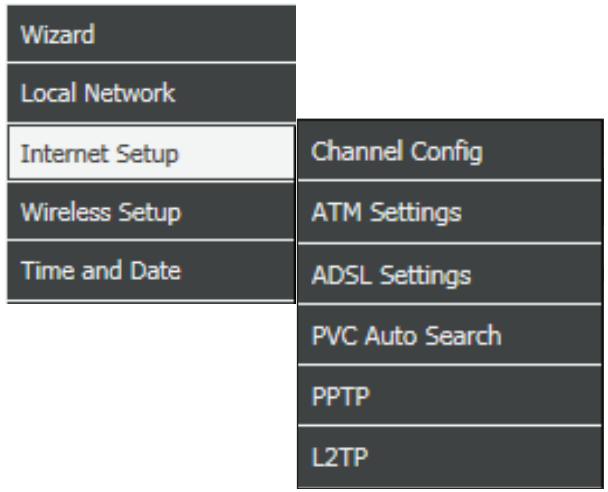
DHCP STATIC IP TABLE

This table lists the current reserved DHCP IP addresses by MAC address and IP address. Press **Select** radio button and the **Modify or Delete Selected** above to make adjustments.

Internet Setup

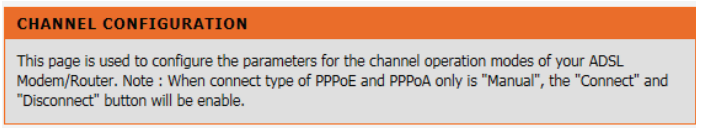
Hover your mouse over the **Internet Setup** option on the vertical menu bar running along the left side to access:

Channel Config
ATM Settings
ADSL Settings
PVC Auto Search
PPTP
L2TP



Channel Config

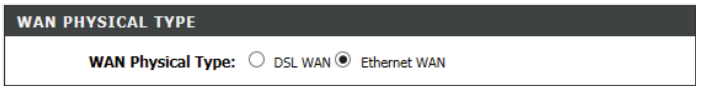
Click **Internet Setup** on the left menu to configure your connection manually.
This section is only recommended for advanced users. It is recommended to use the **Setup Wizard** to set up your Internet connection.



The following sections describe how to Create a New Connection, Modify an existing connection, or Delete a connection.

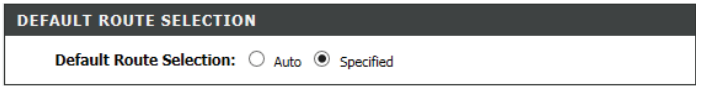
WAN PHYSICAL TYPE

Allows you to choose **DSL WAN** or **Ethernet WAN**. If you choose Ethernet WAN,, LAN Port 4 is used as the WAN port.



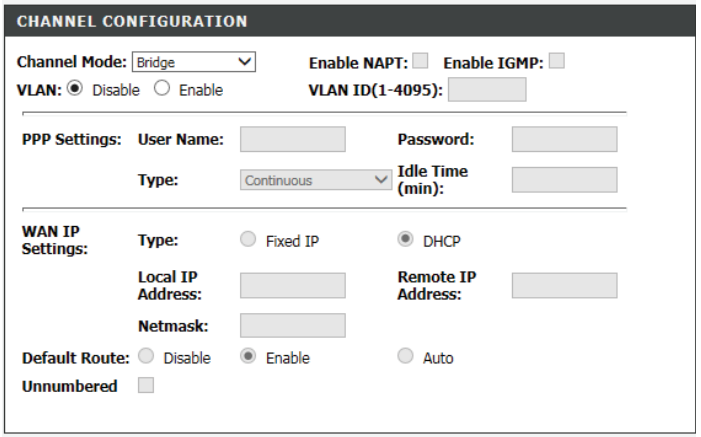
DEFAULT ROUTE SELECTION

Choose **Auto** or **Specified**. **Auto** is recommended for most configurations. **Specified** allows you to customize **WAN IP** settings for unusual routing configurations.



CHANNEL CONFIGURATION

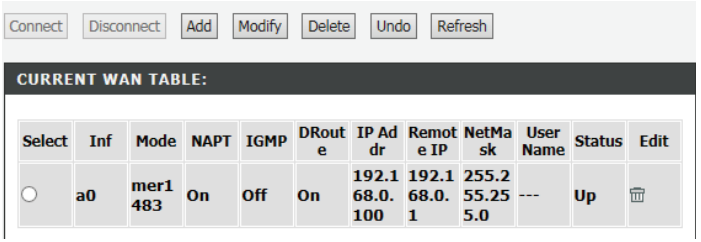
This panel is for manually configuring your WAN connection. It's options change depending on other selections and is described in detail beginning on page 35.



Channel Config (Continued)

CURRENT WAN TABLE

This table lists the current WAN configuration. It displays the **Interface Name**, **Mode**, **Vlan Id**, **VPI/VCI** settings, the **Encapsulation** method, and **Status**.



To modify an existing entry, select the radial button of the row you wish to alter and click on the **Modify** button below the **WAN Configuration** boxm, or for DSL connections, you can click the pencil icon. Refer to **Modify an Existing Connection** on page 46.

To delete an existing connection, select the radio button of the row you wish to alter and click on the **Delete** button below the **WAN Configuration** box or click on the trash can icon in the **Edit** column.

The **Connect** and **Disconnect** buttons become available

To create a new connection, proceed to the next page.

Creating a New Connection

The following pages describe how to add connections of various types. These procedures are recommended for advanced users. It is strongly recommended that most users use the Setup Wizard on page 14

Bridge Mode (DSL WAN/Ethernet WAN)

WAN CONFIGURATION

Channel Mode: Select **Bridge**.

VPI (DSL Only): Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP. This option is not available for Ethernet WAN.

VCI (DSL Only): Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP. This option is not available for Ethernet WAN.

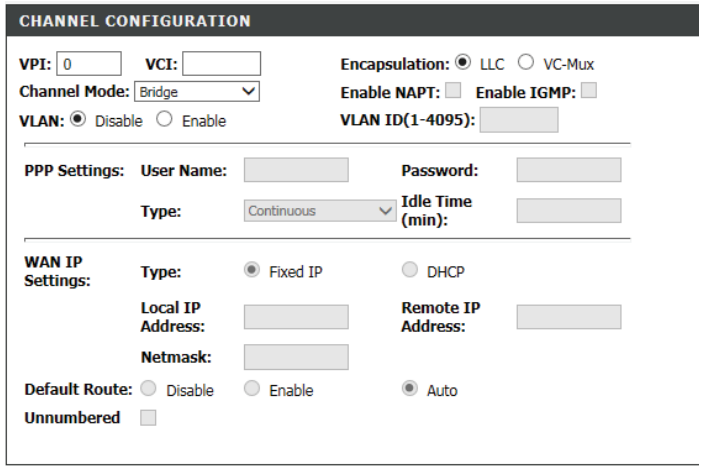
Encapsulation: Select the type of encapsulation your ISP uses, either Logical Link Control (**LLC)** or Virtual Circuit Multiplexing (**VC-Mux)**.

Enable NAPT: Bridge mode does not support NAPT.

Enable IGMP: Bridge mode does not support IGMP.

802.1q: Choose to either **Disable** or **Enable** the use of VLANs.

VLAN ID(1-4095): If you enabled 802.1q, enter the VLAN ID.



Bridge mode does not support PPP or WAN IP settings.

Click **Add** to create your connection. Further configuration of your other network equipment may be necessary.

DHCP(Static IP) (DSL WAN/Ethernet WAN)

WAN CONFIGURATION

Channel Mode: Select **DHCP(Static IP)**. The mode allows you to get an IP address through DHCP or through a Static IP.

Note: This is sometimes referred to as 1483 MER, and appears as **mer1483** in the **Current WAN Table**.

VPI: Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP.

VCI: Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP.

Encapsulation: Select the type of encapsulation your ISP uses, either Logical Link Control (**LLC)** or Virtual Circuit Multiplexing (**VC-Mux)**.

Enable NAPT: Check this box to enable NAT, which allows devices on your network to share one public IP address.

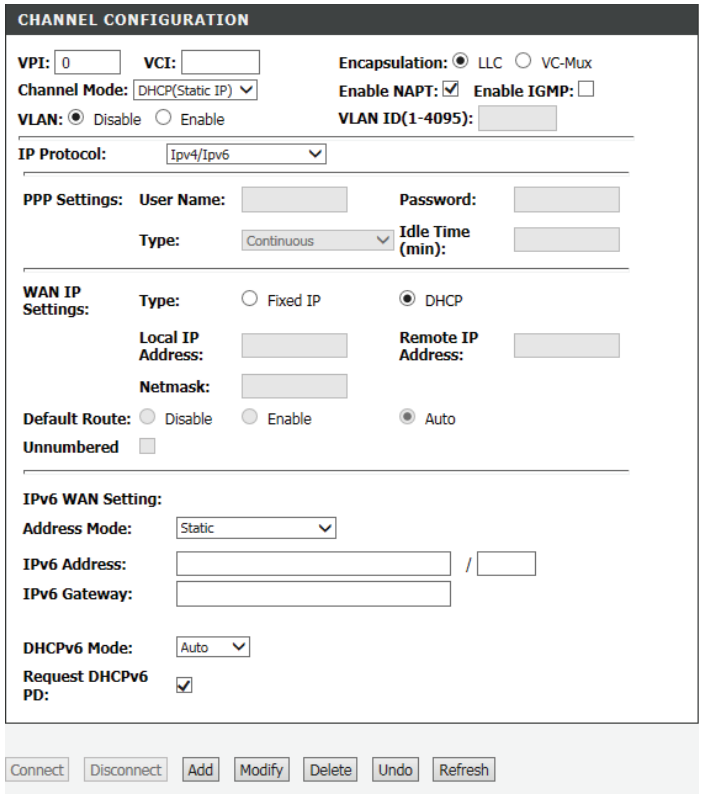
Enable IGMP: Check to enable IGMP Multicast.

802.1q: Choose to either **Disable** or **Enable** the use of VLANs.

VLAN ID(1-4095): If you enabled 802.1q, enter the VLAN ID.

IP Protocol: Select the type of IP addressing: **IPv4/v6, IPv4,** or **IPv6**. This will effect the **WAN IP Settings** and **WAN IPv6 Settings**.

PPP Settings: 1483 MER does not support PPP authentication.



DHCP(Static IP) (continued)

WAN IP Settings: Configure the IPv4 WAN settings. If the IP Protocol is set to **IPv6,** these settings are unavailable.

Type: Choose either **Fixed** (Static IP), or **Dynamic IP**.

The following settings are available if **Type** is set to **Fixed**:

Local IP Address: Enter your local IP address.

Netmask: Enter your subnet mask.

Default Route: This defaults to **Auto**.

Unnumbered: This option is unavailable.

IPv6 WAN Settings: Configure the IPv6 WAN settings. If the IP Protocol is set to **IPv4,** these settings are unavailable.

Address Mode: Select either **Slaac** or **Static**.

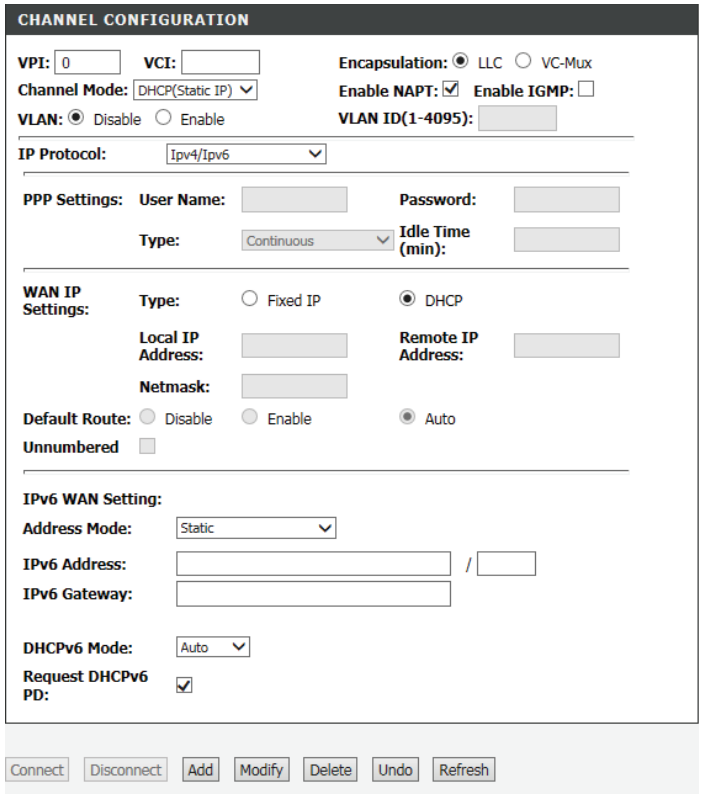
IPv6 Address: Enter your IPv6 Static Address. Only available in Static mode.

IPv6 Gateway: Enter your IPv6 Gateway. Only available in Static mode.

DHCPv6 Mode: Select either **Auto**, **Enable**, or **Disable**.

Request DHCPv6 Address: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable** or **Auto**:

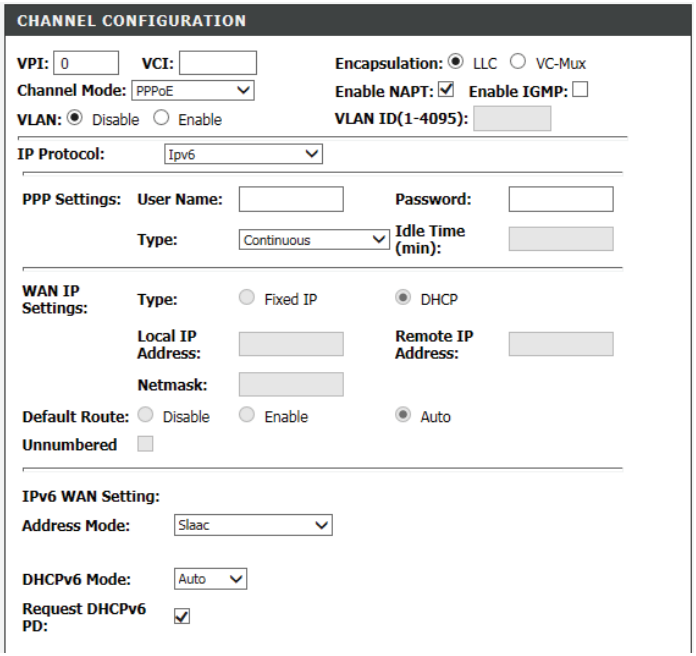
Request DHCPv6 PD: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable**.



Click **Add** to create your connection.

PPPoE (DSL WAN/Ethernet WAN)

WAN CONFIGURATION



Channel Mode: Select **PPPoE**.

VPI (DSL Only): Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP. This option is not available for Ethernet WAN connections.

VCI (DSL Only): Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP. This option is not available for Ethernet WAN connections.

Encapsulation (DSL Only): Select the type of encapsulation your ISP uses, either Logical Link Control (**LLC)** or Virtual Circuit Multiplexing (**VC-Mux)** This option is not available for Ethernet WAN connections..

Enable NAPT: Check this box to enable NAT, which allows devices on your network to share one public IP address.

Enable IGMP: Check to enable IGMP Multicast.

VLAN: Choose to either **Disable** or **Enable** the use of VLANs.

VLAN ID(1-4095): If you enabled 802.1q, enter the VLAN ID.

IP Protocol: Select the type of IP addressing: **IPv4/v6, IPv4,** or **IPv6**.

PPP Settings: Enter your PPP authentication information.

User Name: Enter your PPPoE account username provided by your ISP.

Password: Enter your PPPoE account password provided by your ISP.

PPPoE Mode (continued)

Type: Select how your DSL-124 connects to your ISP. Choose either **Continuous**, **Connect on Demand**, and **Manual**.

Idle Time (min): If you selected **Connect on Demand**, enter the amount time the router waits if there is no activity before disconnecting.

WAN IP Settings: If **IPv4** or **IPv4/IPv6** is selected, these settings are disabled. The router will use **DHCP** only, **Fixed** (Static IP) is unavailable.

IPv6 WAN Settings: Configure the IPv6 WAN settings. If the IP Protocol is set to **IPv4,** these settings are unavailable.

Address Mode: Select either **Slaac** or **Static**.

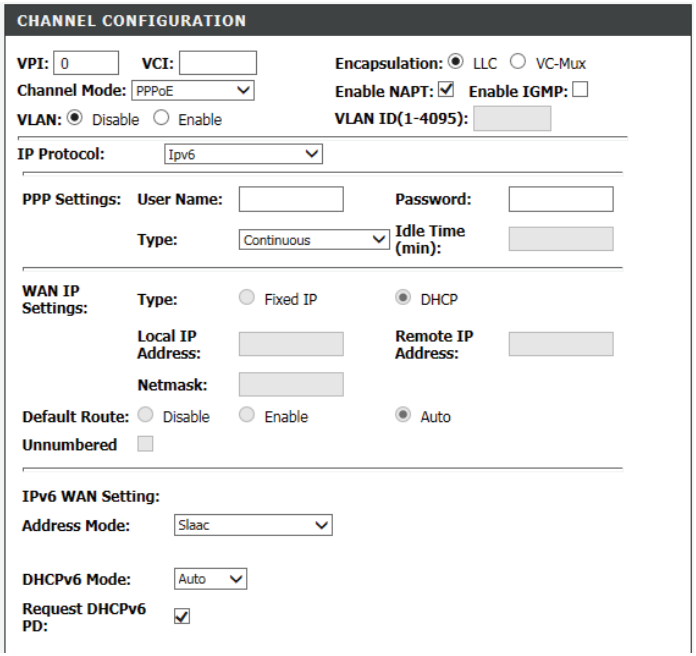
IPv6 Address: Enter your IPv6 Static Address. Only available in Static mode.

IPv6 Gateway: Enter your IPv6 Gateway. Only available in Static mode.

DHCPv6 Mode: Select either **Auto**, **Enable**, or **Disable**.

Request DHCPv6 Address: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable** or **Auto**:

Request DHCPv6 PD: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable**.



Note: If you need to manually specify PPPoE authentication methods, you must first create the connection, and then modify it by selecting the pencil icon from the WAN Table. See page 46.

Click **Add** to create your connection.

PPPoA Mode (DSL WAN Only)

WAN CONFIGURATION

Channel Mode: Select **PPPoA**.

VPI: Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP.

VCI: Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP.

Encapsulation: Select the type of encapsulation your ISP uses, either Logical Link Control (**LLC)** or Virtual Circuit Multiplexing (**VC-Mux)**.

Enable NAPT: Check this box to enable NAT, which allows devices on your network to share one public IP address.

Enable IGMP: Check to enable IGMP Multicast.

VLAN: Choose to either **Disable** or **Enable** the use of VLANs.

VLAN ID(1-4095): If you enabled **VLAN**, enter the VLAN ID.

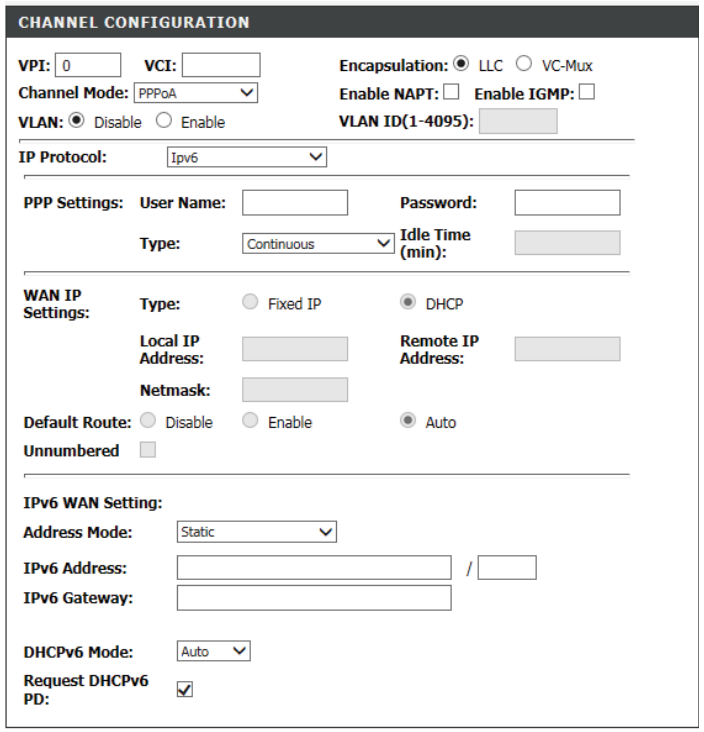
IP Protocol: Select the type of IP addressing: **IPv4/v6, IPv4,** or **IPv6**. This will effect the **WAN IP Settings** and **WAN IPv6 Settings**.

PPP Settings: Enter your PPP authentication information.

User Name: Enter your PPPoA account username provided by your ISP.

Password: Enter your PPPoA account password provided by your ISP.

Type: Select how your DSL-124 connects to your ISP. Choose either **Continuous**, **Connect on Demand**, and **Manual**.



PPPoA Mode (continued)

Idle Time (min): If you selected **Connect on Demand**, enter the amount the router waits if there is no activity before disconnecting from the Internet.

WAN IP Settings: If **IPv4** or **IPv4/IPv6** is selected, these settings are disabled. The router will use **DHCP** only, **Fixed** (Static IP) is unavailable.

IPv6 WAN Settings: Configure the IPv6 WAN settings. If the IP Protocol is set to **IPv4,** these settings are unavailable.

Address Mode: Select either **Slaac** or **Static**.

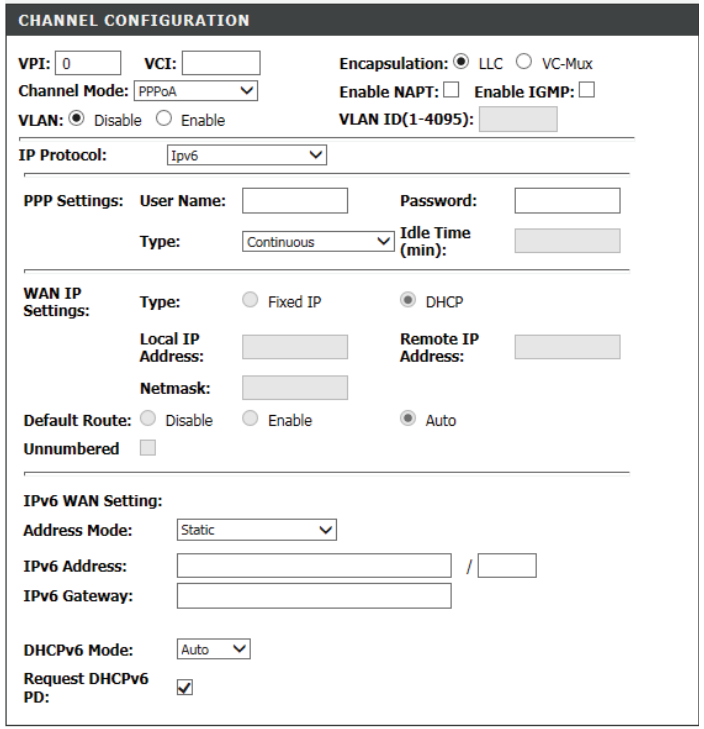
IPv6 Address: Enter your IPv6 Static Address. Only available in Static mode.

IPv6 Gateway: Enter your IPv6 Gateway. Only available in Static mode.

DHCPv6 Mode: Select either **Auto**, **Enable**, or **Disable**.

Request DHCPv6 Address: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable** or **Auto**:

Request DHCPv6 PD: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable**.



Click **Add** to create your connection.

1483 Routed Mode (DSL WAN Only)

WAN CONFIGURATION

Channel Mode: Select **1483 Routed**.

VPI: The virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP.

VCI: The virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP.

Encapsulation: Select the type of encapsulation your ISP uses, either Logical Link Control (**LLC)** or Virtual Circuit Multiplexing (**VC-Mux)**.

Enable NAPT: Check this box to enable NAT, which allows devices on your network to share one public IP address.

Enable IGMP: Check to enable IGMP Multicast.

VLAN: Choose to either **Disable** or **Enable** the use of VLANs.

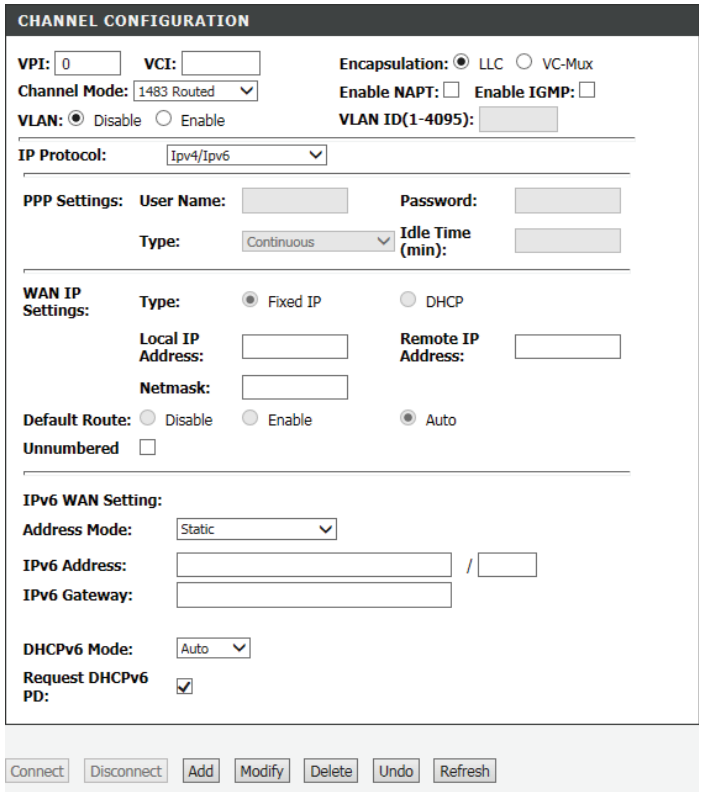
VLAN ID(1-4095): If you enabled **VLAN**, enter the VLAN ID.

IP Protocol: Select the type of IP addressing: **IPv4/v6, IPv4,** or **IPv6**. This will effect the **WAN IP Settings** and **WAN IPv6 Settings**.

PPP Settings: 1483 Routed mode does not support PPP authentication.

WAN IP Settings: Configure the IPv4 WAN settings. If the IP Protocol is set to **IPv6,** these settings are unavailable.

Type: Only **Fixed** (Static IP) is available for 1483 Routed Mode.



1483 Routed Mode Continued

Local IP Address: Enter your local IP address.

Remote IP Address: Enter your default gateway.

Netmask: Enter your subnet mask.

Default Route: This defaults to **Auto**.

Unnumbered: This option is unavailable.

IPv6 WAN Settings: Configure the IPv6 WAN settings. If the IP Protocol is set to **IPv4,** these settings are unavailable.

Address Mode: Select either **Slaac** or **Static**.

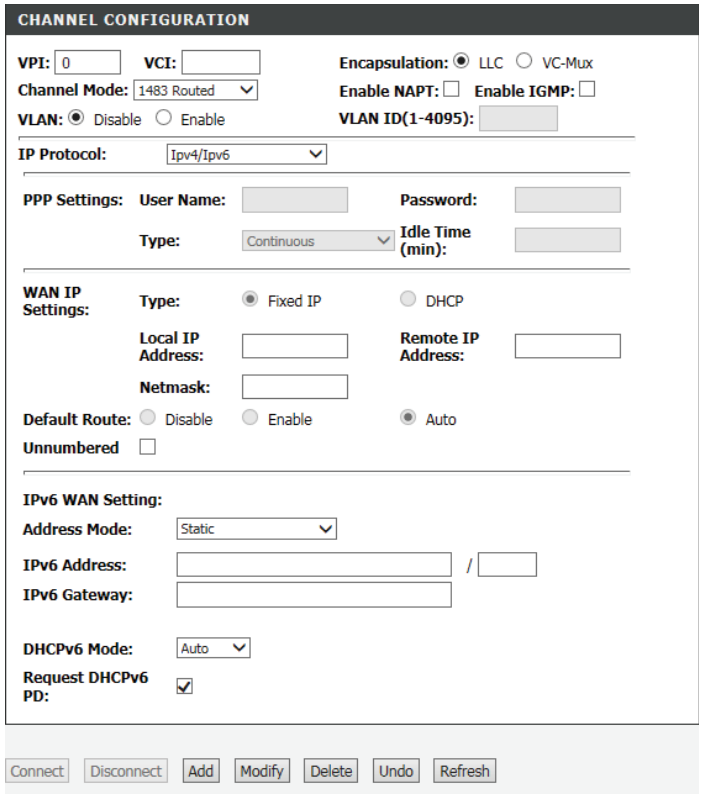
IPv6 Address: Enter your IPv6 Static Address. Only available in Static mode.

IPv6 Gateway: Enter your IPv6 Gateway. Only available in Static mode.

DHCPv6 Mode: Select either **Auto**, **Enable**, or **Disable**.

Request DHCPv6 Address: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable** or **Auto**:

Request DHCPv6 PD: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable**.



Click **Add** to create your connection.

IPoA Mode (DSL WAN)

WAN CONFIGURATION

Channel Mode: Select **IPoA**. This option is available not available on Ethernet WAN.

VPI: Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP.

VCI: Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 32 and 65535. Enter the correct VCI provided by your ISP.

Encapsulation: Only Logical Link Control (**LLC)** encapsulation is supported.

Enable NAPT: Check this box to enable NAT, which allows devices on your network to share one public IP address.

Enable IGMP: Check to enable IGMP Multicast.

VLAN Choose to either **Disable** or **Enable** the use of VLANs.

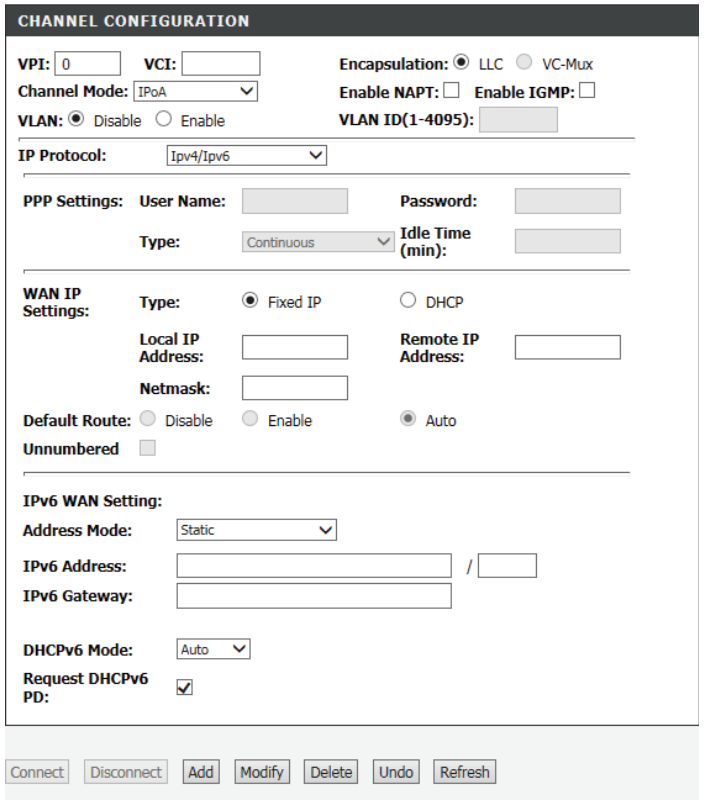
VLAN ID(1-4095): If you enabled **VLAN**, enter the VLAN ID.

IP Protocol: Select the type of IP addressing: **IPv4/v6, IPv4,** or **IPv6**. This will effect the **WAN IP Settings** and **WAN IPv6 Settings**.

PPP Settings: IPoA mode does not support PPP authentication.

WAN IP Settings: Configure the IPv4 WAN settings. If the IP Protocol is set to **IPv6,** these settings are unavailable.

Type: Choose either **Fixed** (Static IP), or **Dynamic IP**.



The following settings are available if **Type** is set to **Fixed**:

IPoA Mode (continued)

Local IP Address: Enter your local IP address.

Netmask: Enter your subnet mask.

Remote IP Address: Enter your default gateway.

Default Route: This defaults to **Auto**.

Unnumbered: This option is unavailable.

IPv6 WAN Settings: Configure the IPv6 WAN settings. If the IP Protocol is set to **IPv4,** these settings are unavailable.

Address Mode: Select either **Slaac** or **Static**.

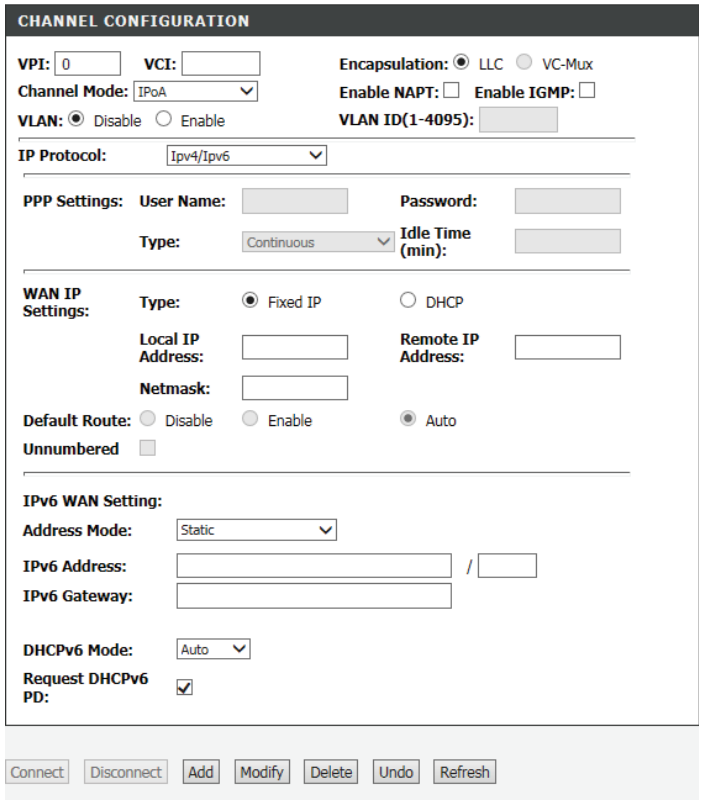
IPv6 Address: Enter your IPv6 Static Address. Only available in Static mode.

IPv6 Gateway: Enter your IPv6 Gateway. Only available in Static mode.

DHCPv6 Mode: Select either **Auto**, **Enable**, or **Disable**.

Request DHCPv6 Address: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable** or **Auto**:

Request DHCPv6 PD: Check this box to enable. Only available if **DHCPv6 Mode** is set to **Enable**.



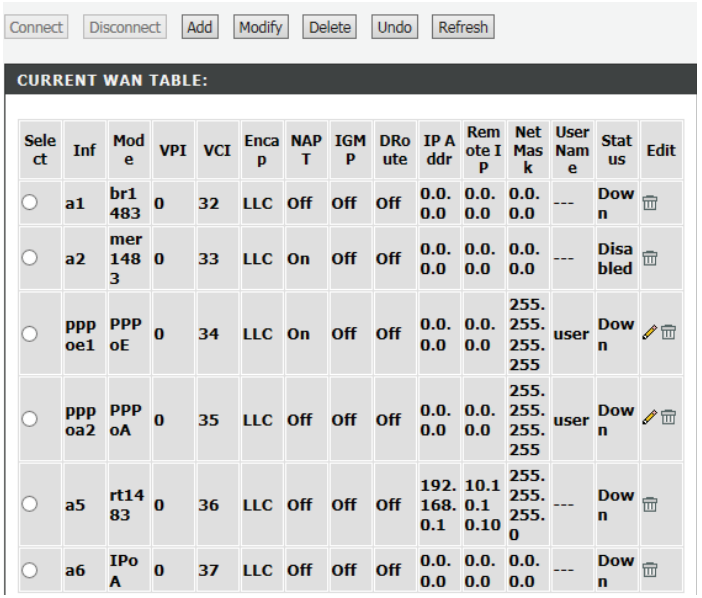
Note: If you need to manually specify PPPoA authentication methods, you must first create the connection, and then modify it by selecting the pencil icon from the WAN Table. See page 47.

Click **Add** to create your connection.

Modify an Existing Connection

To modify an existing entry, click the radial button of the row you wish to alter. You will then be able to change the connection settings in the panel above. using the same settings as new connection creation (see previous section). When you are finished, click **Modify** to commit your changes.

PPPoE and PPPoA have additional settings that can be accessed by clicking on the pencil icon in the **Edit** column.



Modify PPoE Additional Settings

PPP INTERFACE

Protocol: This shows the current protocol being modified.

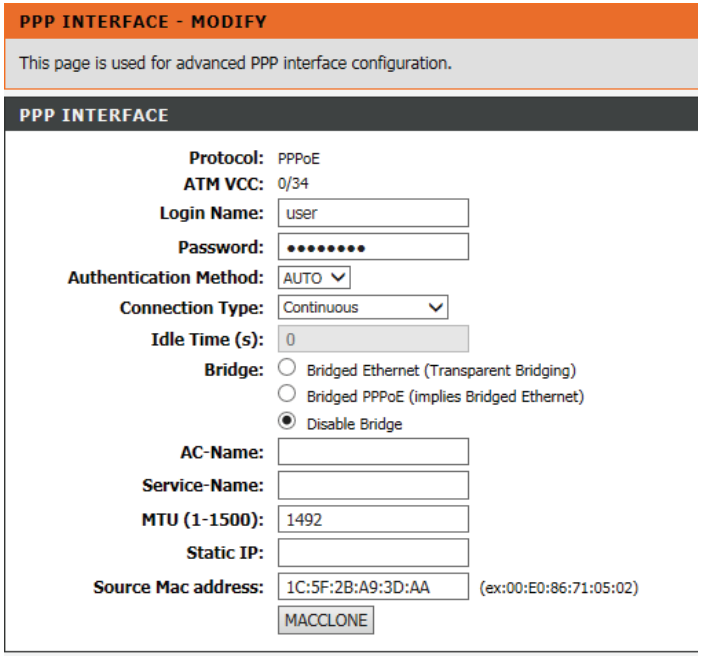
ATM VCC: The shows the current ATM VCC configuration.

Login Name: You can change the currently configured DSL account username here.

Password: You can change the currently configured DSL account password here.

Authentication: Select **PAP**, **CHAP**, or **Auto**. The default is **Auto**.

Connection Type: How your DSL-124 connects to your ISP. Choose either **Continuous**, **Connect on Demand**, and **Manual**.



Modify PPPoA Connection Additional Settings

PPP INTERFACE

Protocol: This shows the current protocol being modified.

ATM VCC: The shows the current ATM VCC configuration.

Login Name: You can change the currently configured DSL account username here.

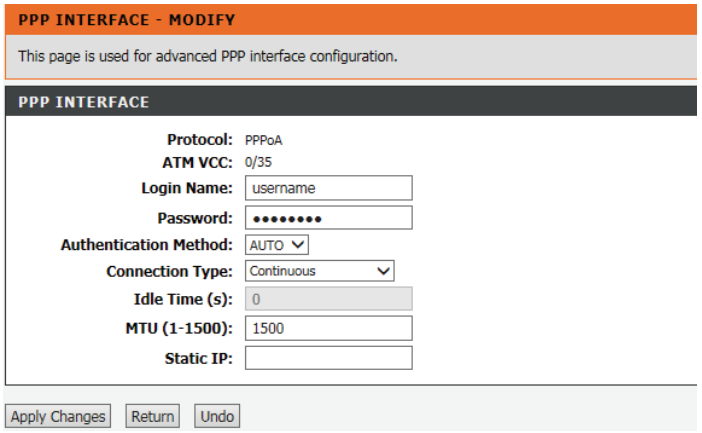
Password: You can change the currently configured DSL account password here.

Authentication: Select **PAP**, **CHAP**, or **Auto**. The default is **Auto**.

Connection Type: How your DSL-124 connects to your ISP. Choose either **Continuous**, **Connect on Demand**, and **Manual**.

Idle Time(s): If you selected **Connect on Demand**, enter the amount time the router waits if there is no activity before disconnecting.

Static IP: If you have been assigned a static IP by your ISP, enter it here.



Click **Apply Changes** to have your changes take effect. Click **Return** to discard your changes and return to the **Internet Setup** page. Click **Undo** to revert back to the existing settings.

Modify PPPoE Connection Additional Settings (continued)

Idle Time(s): If you selected **Connect on Demand**, enter the amount time the router waits if there is no activity before disconnecting.

Bridge: Select **Bridged Ethernet (Transparent Bridging)**, **Bridged PPPoE(implies Bridged Ethernet)**, or **Disable Bridge**.

AC-Name: Used for PPPoE tagging, normally this should be left blank.

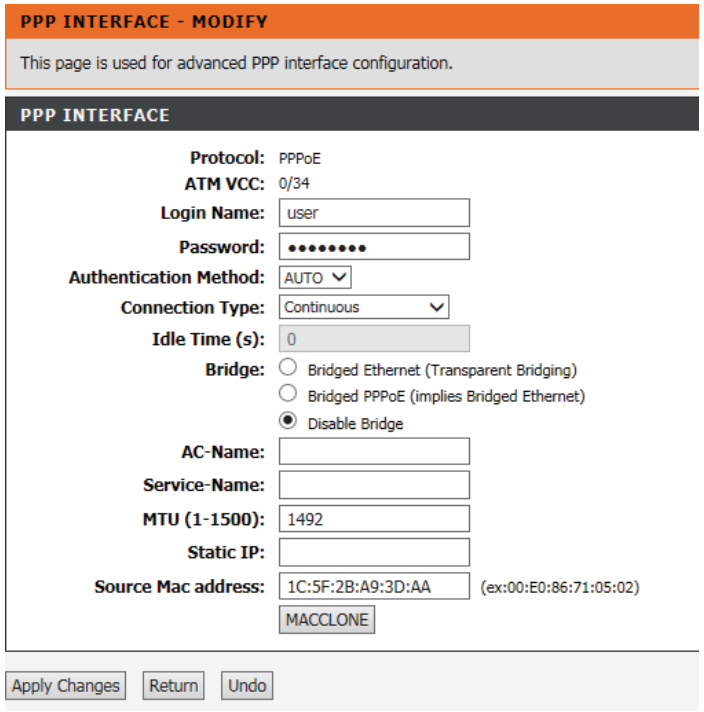
Service-Name: Used for PPPoE tagging, normally this should be left blank.

802.1q: Choose to either **Disable** or **Enable** the use of VLANs.

MTU(1-1500): Enter the packet size. The default is **1492**.

Static IP: If you have been assigned a static IP by your ISP, enter it here.

Source Mac address: By default the DSL-124's MAC address is listed. Press **MACCLONE** to clone your configuring device's MAC address.

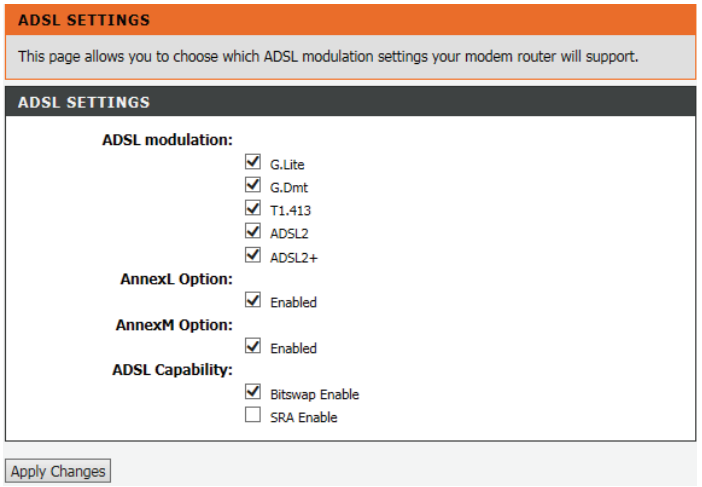


Note: If you need to configure IPv6, you must configure it by using the **Modify** method listed at the begining of this cheaper.

Click **Apply Changes** to have your changes take effect. Click **Return** to discard your changes and return to the **Internet Setup** page. Click **Undo** to revert back to the existing settings.

ADSL Settings

The ADSL Settings page allows you to select the DSL standards your DSL-124 uses to connect to your ISP.



ADSL SETTINGS

To configure the ADSL modulation, click **ADSL Settings**.

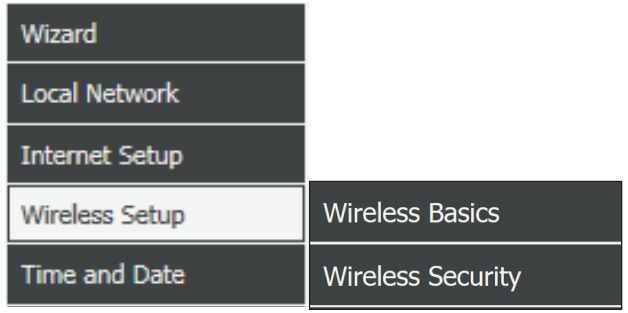
In most cases you can leave the settings at their default values.

Click **Apply Changes** when you are done.

Wireless Setup

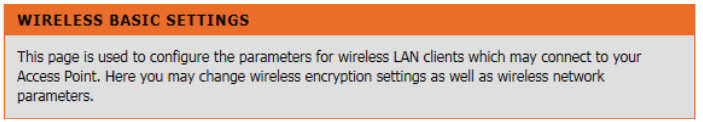
Hover your mouse over the **Wireless Setup** option on the vertical menu bar running along the left side to access:

Wireless Basics
Wireless Security

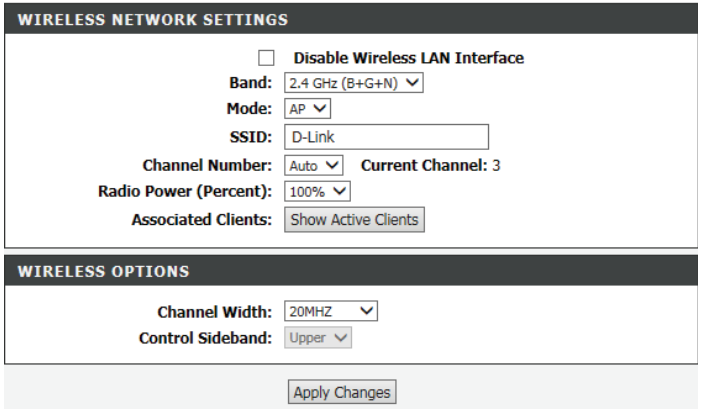


Wireless Basics

This page allows you to manually configure the router's wireless connectivity settings. To change your wireless network security settings refer to **Wireless Security** on page 52.



WIRELESS NETWORK SETTINGS



Disable Wireless LAN Interface: Check this box to disable the Wireless functionality of this device.

Band: Select the wireless standards to use on your wireless network. The options are **2.4 GHz (B)**, **2.4 GHz (G)**, **2.4 GHz (B+G)**, **2.4 GHz (N)**, **2.4 GHz (N+G)**, or **2.4 GHz (N+G+B)**.

Mode: The DSL-124 operates in AP mode by default.

SSID: Enter a unique Network Name (SSID) to identify your network.

Channel Number: Select the channel number for your wireless network to operate on. Choose **1-13**, or **Auto**. The default is **Auto**.

Radio Power (Percent): Choose the wireless transmission power strength. The options are 1**00%**, **60%**, or **20%**. The default is **100%**.

Associated Clients: Click this button to see a list of the currently connected wireless clients.

Channel Width: Choose the transmission channel bandwidth. The options are **20 MHz** or **20/40 MHz**.

Control Sideband: Configure Upper or Lower sideband use for 40 MHz connections.

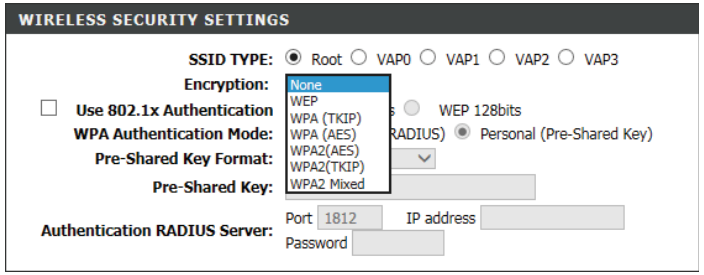
Click **Apply Changes** to have your changes take effect.

Wireless Security

This page allows you to manually configure the router's wireless security settings. To change your wireless network settings refer to **Wireless Setup** on page **50**.

Remember to keep your wireless network passwords safe. Remember that if you change the wireless password of your DSL-124, you must re-input this password on all of your wireless devices.

WIRELESS SECURITY SETTINGS



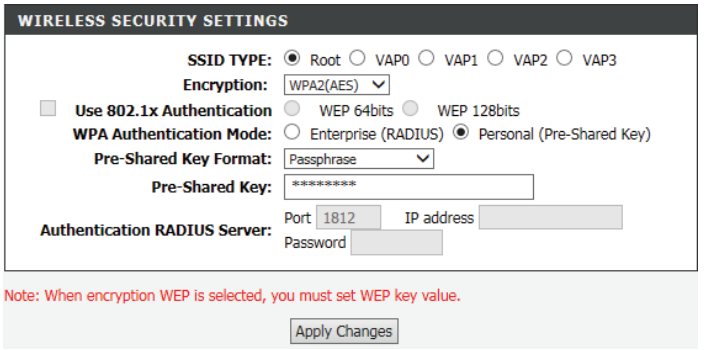
Encryption: Select the type of Encryption you wish to use. The available options are **None**, **WEP**, **WPA(TKIP)**, **WPA(AES)**, **WPA2(AES)**, **WPA2(TKIP)**, and **WPA2 Mixed**. Using **WPA2(AES)** is recommended.

SSID Type: This is an optional advanced feature. If you have additional Virutal Access Points (VAPs) enabled, you can configure their security settings by selecting the corresponding VAP. To configure VAPs see Wireless Multiple BSSID Setup on page 63.

The following pages describe the wireless configuration settings. They are separated by encryption type.

Encryption: WPA2(AES)

WPA2(AES) is the recommended wireless security encryption type. Using it you can be reasonably assured that your wireless connection is secure. All other WPA encryption types follow the same setup, and can be chosen in the event not all devices support WPA2(AES)



WIRELESS SECURITY SETTINGS

Encryption: Choose **WPA2(AES)** from the drop-down menu.

WPA Authentication Mode: Choose either **Enterprise (Radius)** or **Personal (Pre-shared Key)**. Most small home/business networks will want to use **Personal (Pre-shared Key)**. If you are running a dedicated RADIUS authentication server, choose **Enterprise (RADIUS)**

If **Personal (Pre-Shared Key)** is selected:

Pre-Shared Key Format: Select the Encryption key format. Choose either **Passphrase** or **HEX(26 Characters).**

Pre-Shared Key: Enter a wireless key to use on your wireless network.

If **Enterprise (Radius)** is selected:

Authentication RADIUS Server: Enter the **Port**, **IP address**, and **Password** of the RADIUS Server.

Click **Apply Changes** to have your changes take effect.

Encryption: WEP

Use of WEP encryption is not recommended, as it only offers a trivial amount of protection for your wireless data. Unless your clients do not support WPA encryption, it is recommended that you select **WPA2(AES), WPA2(Mixed)** or **WPA(Mixed)** instead of **WEP** as they are more secure.

WIRELESS SECURITY SETTINGS

Encryption: Choose **WEP** from the drop-down menu.

Key Length: Select the Encryption cipher key bit strength. The available options are **64-bit** and **128-bit**.

Key Format: Select the Encryption key format. If you selected a **64-bit** key length, you may choose **ASCII (5 Characters)** or **HEX(10 Characters)**. If you selected a **128-bit** key length, you may choose **ASCII (13 Characters)** or **HEX(26 Characters)**.

Default Tx Key: Select the default Tx key.

Encryption Key 1-4: Enter a wireless key to use on your wireless network.

The following settings are available if **Use 802.1x Authentication** is checked:

Authentication RADIUS Server: Enter the **Port**, **IP address**, and **Password** of the RADIUS Server.

Click **Apply Changes** to have your changes take effect.

Encryption: None

Disabling encryption and leaving your wireless network open is not recommended. Any wireless client will be able to access your network, be able to use your Internet connection, and leaves you open to security threats.

WIRELESS SECURITY SETTINGS

Encryption: Choose **None** from the drop-down menu.

No configuration settings are available if **Encryption** is set to **None**.

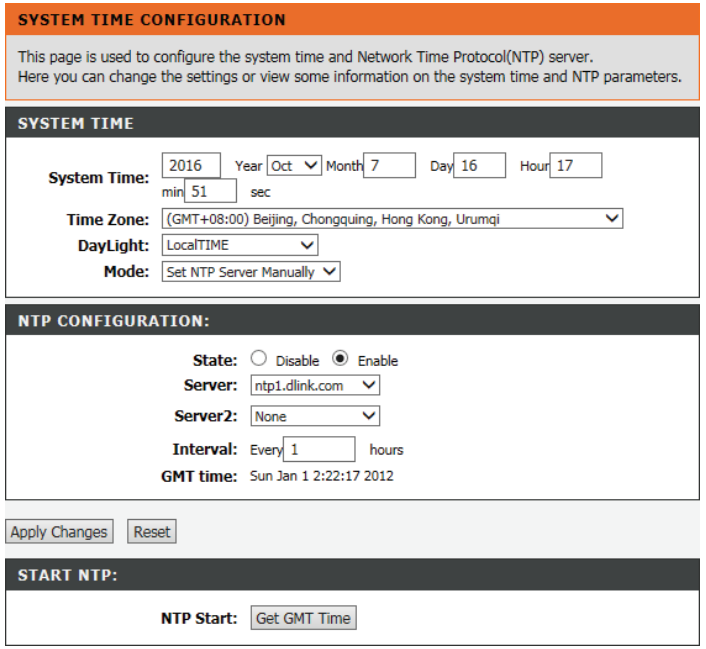
The following settings are available if **Use 802.1x Authentication** is checked:

Authentication RADIUS Server: Enter the **Port**, **IP address**, and **Password** of the RADIUS Server.

Click **Apply Changes** to have your changes take effect.

Time and Date

This section enables you to use an international time server to set the internal time and date for the DSL-124.



SYSTEM TIME

System Time: If **Set Time Manually** has been selected, you can set it here.

Time Zone: Select your time zone from the drop down menu.

Daylight Saving Settings: Configure Daylight Savings Time appropriate for your region..

Synchronize time with: Select the method of setting the time from **Set NTP Server manually**, **Compy Computer Time**, or **Set Time Manually**.

NTP CONFIGURATION

Server: Select **ntp1.dlink.com**, **ntp.dlink.com**, or **other**. If **other** is selected, enter the NTP server address in the box provided.

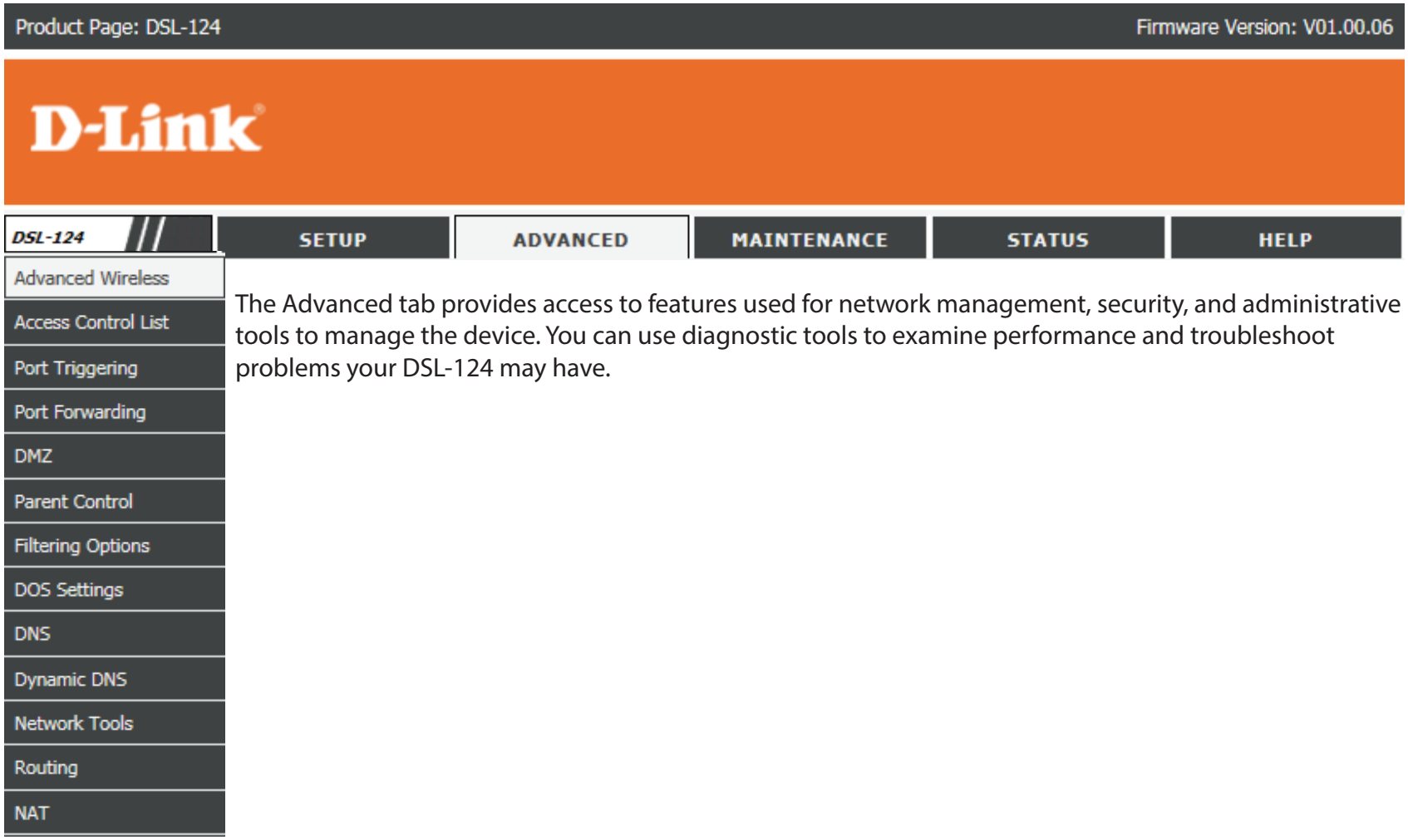
Server2: Select **ntp1.dlink.com**, **ntp.dlink.com**, or **other**. If **other** is selected, enter the NTP server address in the box provided.

Interval: Enter the frequency which the time is updated.

GMT time: The current time is displayed.

Click **Apply Changes** when you are done or **Reset** to revert to the previous settings.

Advanced

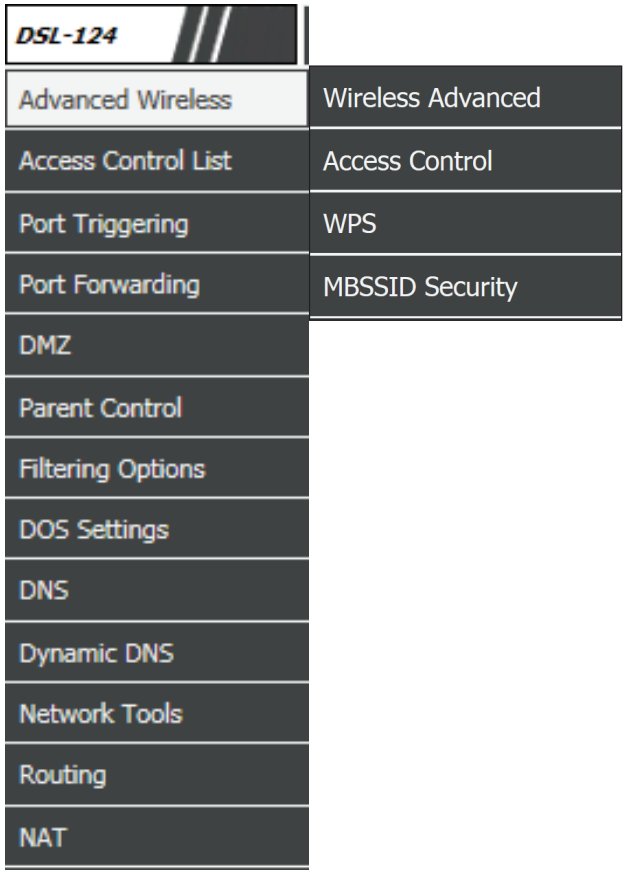


The Advanced tab provides access to features used for network management, security, and administrative tools to manage the device. You can use diagnostic tools to examine performance and troubleshoot problems your DSL-124 may have.

Advanced Wireless

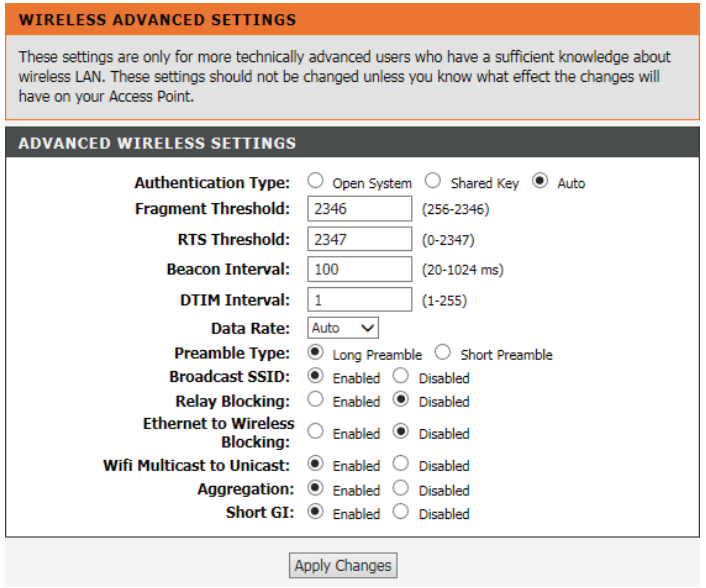
Hover your mouse over the **Advanced Wireless** option on the vertical menu bar running along the left side to access:

Wireless Advanced
Access Control
WPS
MBSSID Security



Wireless Advanced

This section allows for advanced configuration of wireless settings.



ADVANCED WIRELESS SETTINGS

Authentication Type: Select the type of authentication, either **Open System**, **Shared Key**, or **Auto**. **Open System** is not recommended.

Fragmentation Threshold: **2346** is the default and recommended setting. Packets exceeding this threshold, in bytes, are fragmented before transmission. Advanced users may wish to adjust this value to improve performance in the presence of radio frequency (RF) interference.

RTS Threshold: **2347** is the default and recommended setting. Advanced users may wish to make minor adjustments if data flow problems exist.

Beacon Interval: **100** is the default and recommended setting. Specify a value for the beacon interval. Beacons are packets sent to synchronize a wireless network.

DTIM Interval: **1** is the default and recommended setting. Delivery traffic indication messages inform wireless clients of how often to listen for buffered multicast or broadcast data.

Data Rate: Select the data rate from the drop down menu. Be careful when selecting speeds as your legacy devices may not support higher speeds or bandwidths. The default and recommended setting is **Auto**.

Preamble Type: Use the drop-down menu to specify whether the router should use the **Short Preamble** or **Long Preamble** type. The preamble type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the router and roaming wireless adapters.

Wireless Advanced (continued)

Broadcast SSID: **Visible** networks conveniently advertise their existence to devices looking for Wi-Fi networks to join. **Invisible**, or hidden, networks do not. To join an invisible network users must manually input its SSID. **Note:** Making a network **Invisible** is not a form of security.

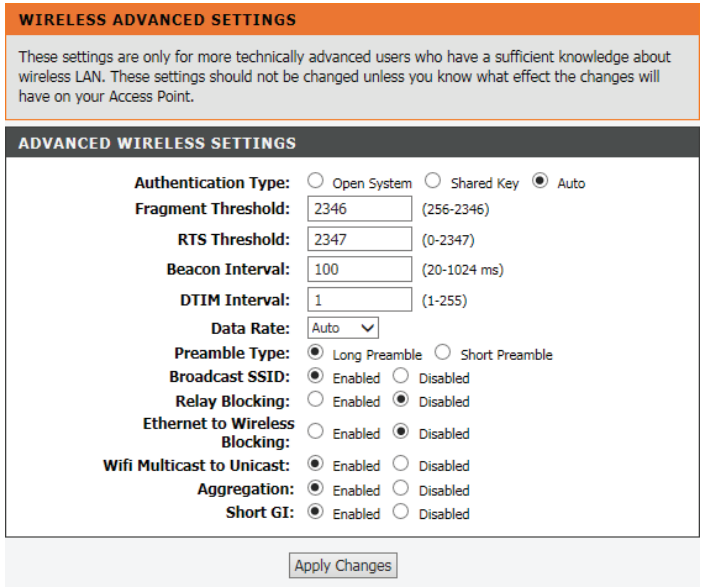
Relay Blocking: **Enable** user isolation to prevent wireless clients from communicating with each other. This may be desired if the DSL-2745 is used in a public setting

Ethernet to Wireless Blocking: **Enable** user isolate to prevent wireless and Ethernet clients from communicating with each other. This may be desired if the DSL-124 is used in a public setting

Wifi Multicast to Unicast: **Enable** to convert multicast packets to unicast packets over Wi-Fi using single session protocols. This may be desirable to improve streaming quality to multiple clients.

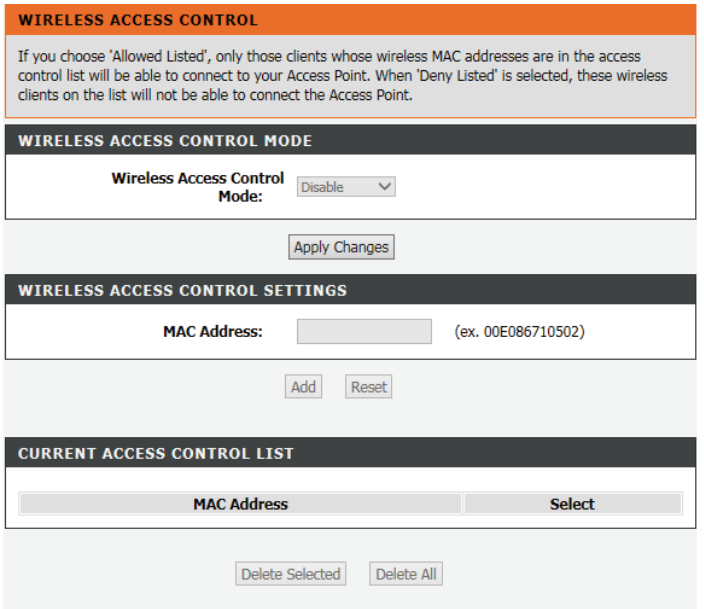
Aggregation: **Enable** to potentially increase throughput by sending multiple frames in a single packet.

Short GI: **Enable** to reduce empty space between symbol transmission and potentially increase throughput. May reduce speeds in areas with high radio echo.



Wireless Access Control

The Wireless Access Control setup section enables you to configure MAC Address filters to control which wireless clients can or cannot connect to your network.



WIRELESS ACCESS CONTROL MODE

Wireless Access Control Mode: Select **Allow Listed, Deny Listed,** or **Disable**.

Click **Apply Changes** when you are done.

WIRELESS ACCESS CONTROL SETTINGS

MAC Address: Enter the MAC address of the device you wish to add to the current access control list.

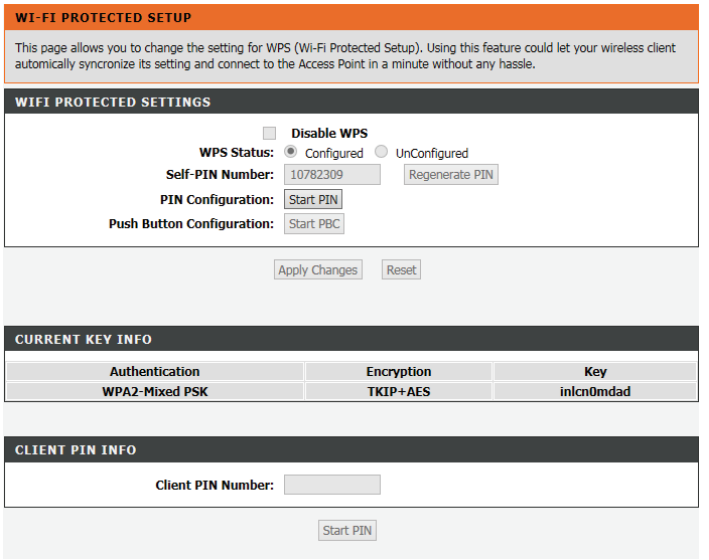
Click **Add** to add a device to the access control list or click **Reset** to clear the MAC address.

CURRENT ACCESS CONTROL LIST

This list currently displays the MAC addresses of the devices being filtered. To remove a device from the list, select the radio button next to the MAC address and click the **Delete Selected** button. To remove all the entries from the list, click **Delete All**.

Wi-Fi Protected Setup

This section allows you to configure how the DSL-124 uses Wi-Fi Protected Setup (WPS) to create a secure wireless connection.



WIFI PROTECTED SETTINGS

Check the box to **Disable WPS**.

WPS Status: WPS is configured by default.

Self-PIN Number: Enter a 4 or 8 digit WPS pin, or click **Regenerate PIN** to create a new random WPS PIN.

PIN Configuration: Click **Start PIN** to activate the WPS-PIN (PIN) method. You will then have 120 seconds to connect an enter the PIN on your device.

Push Button Configuration: Click **Start PBC** to activate the WPS-PBC (push-button) method. You will then have 120 seconds to press the WPS button on the new device that you wish to connect.

Click **Apply Changes** when you are done or click **Reset** to undo any changes you may have made.

CURRENT KEY INFO

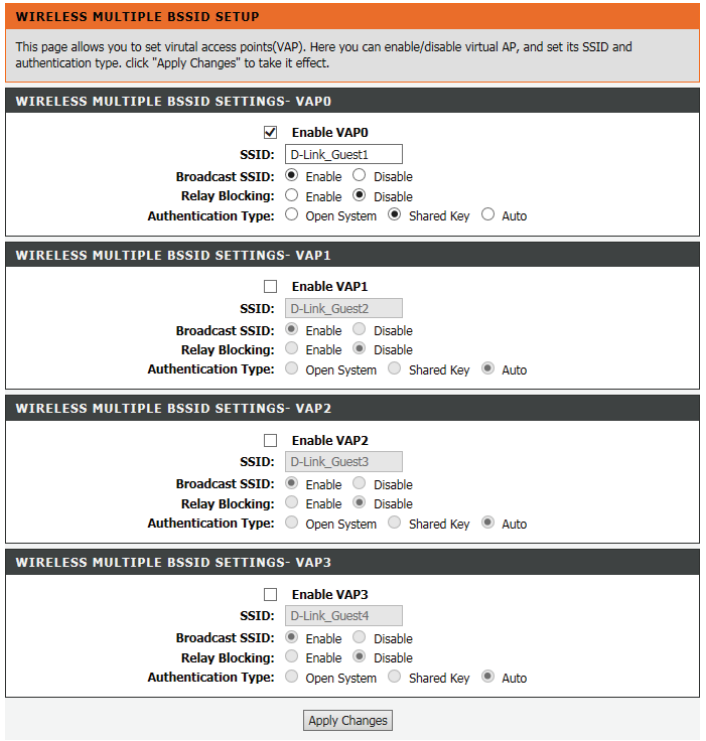
If a device is currently connected through WPS, this box shows the type of Authentication, Encryption, and wireless key.

CLIENT PIN INFO

Some wireless configuration utilities on client devices allow you to generate a WPS PIN. This can be useful in various situations, such as to ensure that you are adding the correct wireless device to your network. To use this feature, create a PIN on your wireless client, enter it into the **Client PIN Number** box, and click **Start PIN**.

Wireless Multiple BSSID Setup

You can use Multiple BSSIDs to create Virtual Access Points, which appear as separate wireless networks to users. This is useful if you want to create a guest network whose key you could give away freely without compromising device security.



WIRELESS MULTIPLE BSSID SETTINGS - VAP0 - VAP3

Enable VAP0-VAP2 Check **Enable** to create a guest wireless network.

SSID: Enter a unique Network Name (SSID) to identify your guest network.

Broadcast SSID: **Visible** networks conveniently advertise their existence to devices looking for Wi-Fi networks to join. **Invisible**, or hidden, networks do not. To join an invisible network users must manually input its SSID. **Note:** Making a network **Invisible** is not a form of security alone.

Relay Blocking: **Enable** user isolation to prevent wireless clients from communicating with each other. This may be desired if the DSL-124 is used in a public setting.

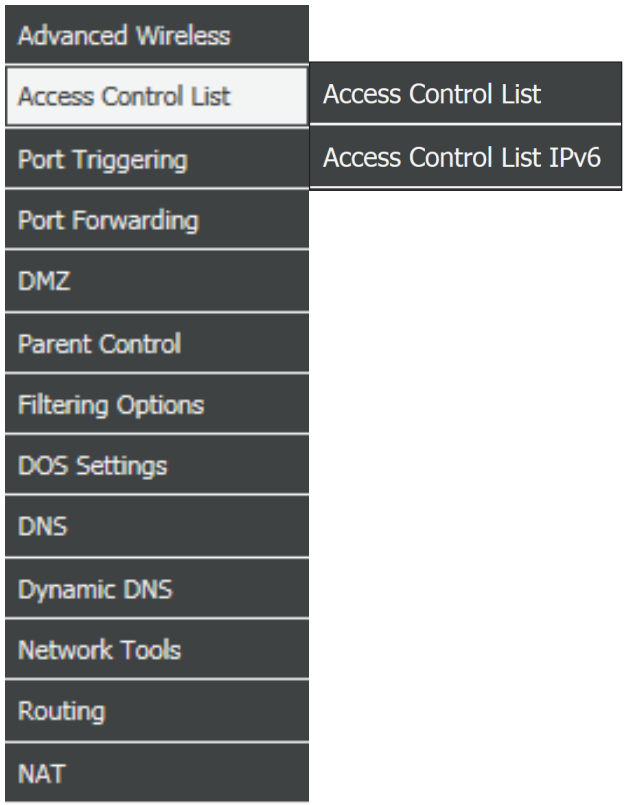
Authentication Type: Select the type of authentication, either **Open System**, **Shared Key**, or **Auto**. **Open System** is not recommended.

Note: to configure the Wi-Fi passwords for Virtual APs, see Wireless Security Settings on Wireless Security on page 52

Access Control List

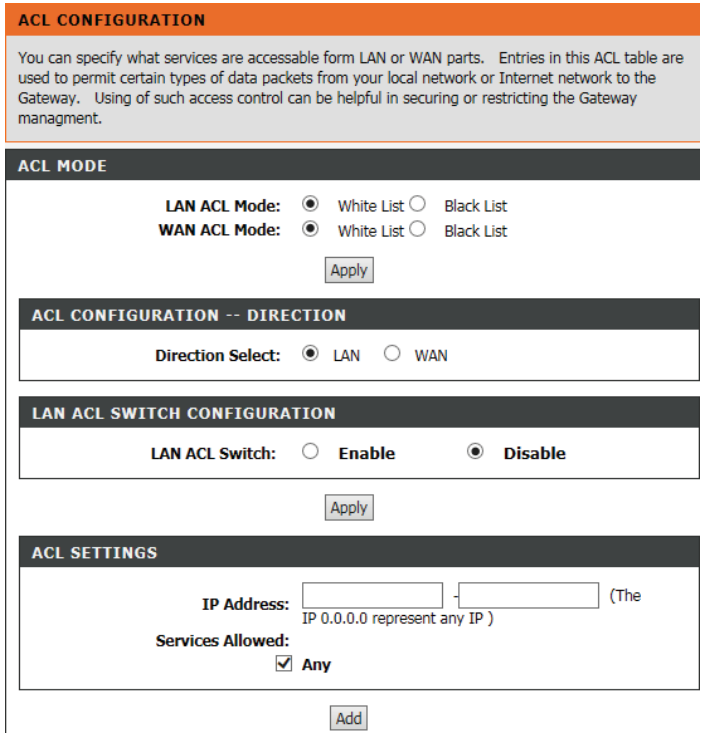
Hover your mouse over the **Access Control List** option on the vertical menu bar running along the left side to access:

Access Control List
Access Control List IPv6



Access Control List

This page allows you to enable or disable various services from being used on the LAN or WAN side over IPv4.



APPLICATION TYPE

LAN ACL Mode: Choose to white list or black list selected services over LAN.

WAN ACL Mode: Choose to white list or black list selected services over WAN.

Direction Select Choose either **LAN** or **WAN.**

LAN ACL Switch Configuration Select **Enable** to apply access controls to connections within LAN.

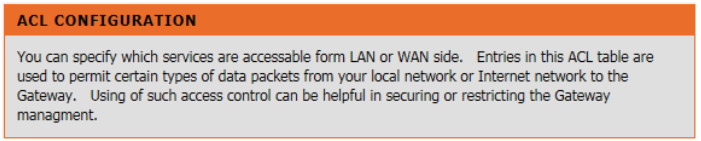
IP Address Enter the IP Address to which you want to apply access controls. **Note**: if you enter 0.0.0.0 without any white listed users, the web interface will become inaccessible and you will have to reset the router.

Services Allowed Select services to which you wish to apply access controls.

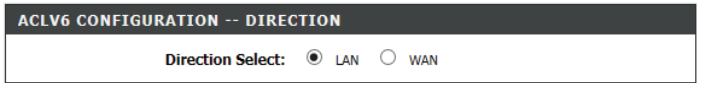
Click the **Apply** button once you are satisfied with your changes.

Access Control List IPv6

This page allows you to enable or disable various services from being used on the LAN or WAN side using IPv6 parameters.



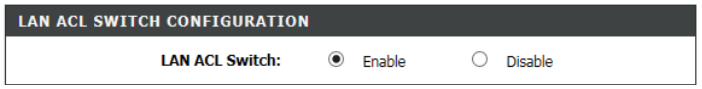
ACLV6 CONFIGURATION -- DIRECTION



Direction Select: Choose either LAN or WAN.

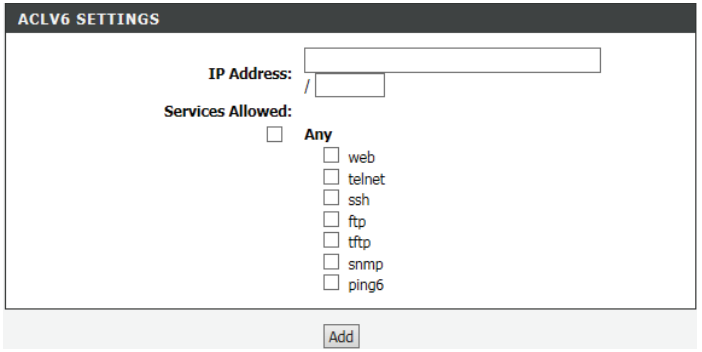
The following settings are available if **Direction Select** is set to **LAN**:

LAN ACL SWITCH CONFIGURATION



LAN ACL Switch: Choose either **Enable** or **Disable**.

ACLV6 SETTINGS



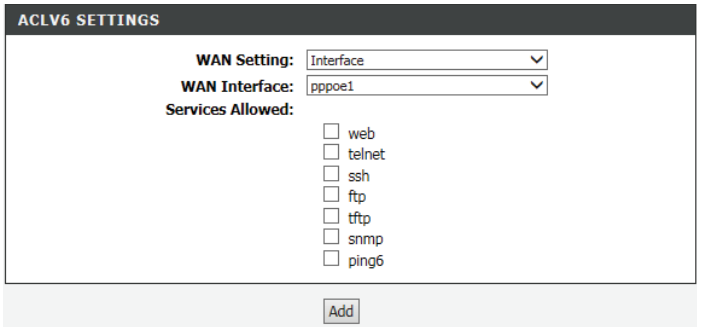
IP Address: Enter the IPv6 IP address and prefix.

Services Allowed: Un-check **Any** to individually select the services which will be available on your LAN.

Click **Add** to add the ACLv6 rule.

Access Control List IPv6 (continued)

The following settings are available if **Direction Select** is set to **WAN**:



ACLV6 SETTINGS

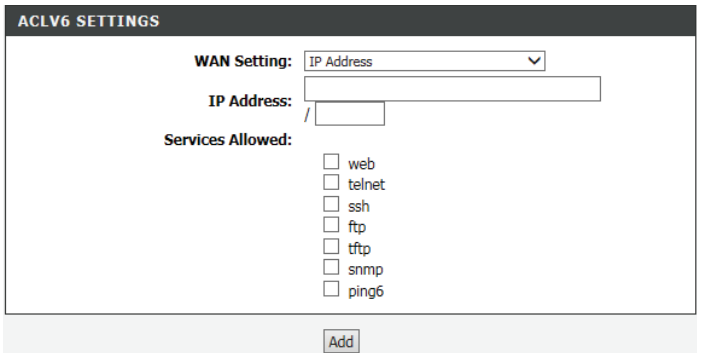
WAN Setting: Select either **Interface** or **Address**.

The following settings are available if **WAN Setting** is set to **Interface**:

WAN Interface: Select the WAN interface to apply the ACLv6 rule to.

Services Allowed: Select the services to allow.

The following settings are available if **WAN Setting** is set to **IP Address**:



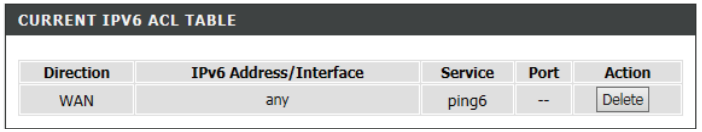
IP Address: Enter the IPv6 IP address and prefix.

Services Allowed: Select the services to allow.

Click **Add** to add the ACLv6 rule.

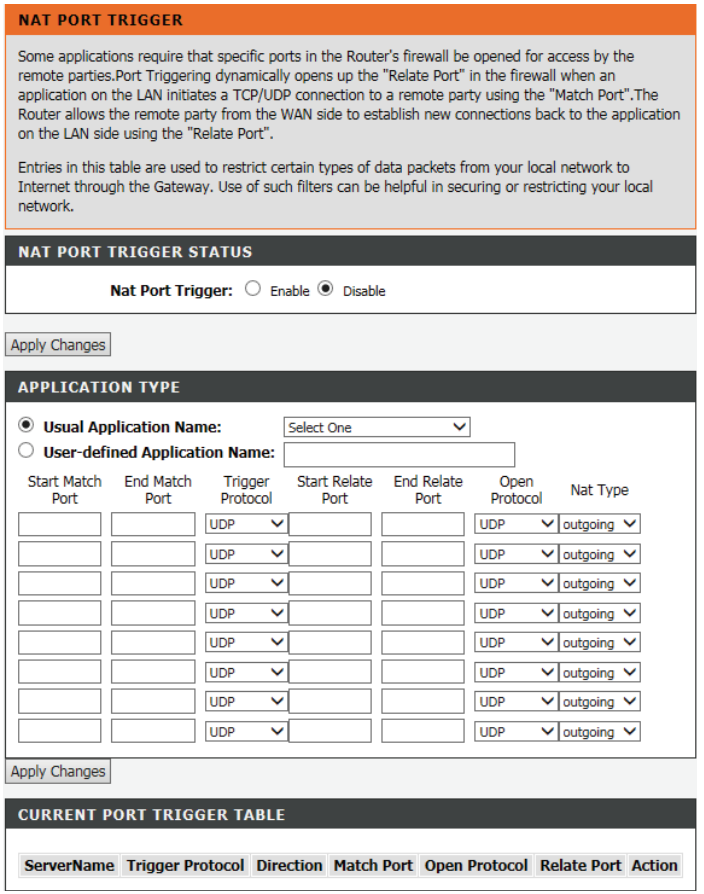
CURRENT IPV6 ACL TABLE

This table displays the IPv6 ACL rules. To delete a rule, click **Delete**.



Port Triggering

Port triggering allows ports to be opened when traffic is detected on specified ports. This is used for facilitating communication between applications and servers behind a NAT firewall.



NAT PORT TRIGGER STATUS

Nat Port Trigger: Select **Enable** or **Disable**.

Click **Apply Changes** to have your changes take effect.

APPLICATION TYPE

Usual Application Name: These commonly used applications are provided as an example of how to input port ranges.

User-defined Application name: Name the rule you are about to define for your application. You may define up to 8 port ranges per application.

Start Match Port: Enter the starting source port range your DSL-124 will forward traffic from.

End Match Port: Enter the ending source port range your DSL-124 will forward traffic from.

Trigger Protocol: Select the protocol to monitor for to trigger this rule.

Start Relate Port: Enter the starting destination port range your DSL-124 will forward traffic to.

End Relate Port: Enter the ending destination port range your DSL-124 will forward traffic to.

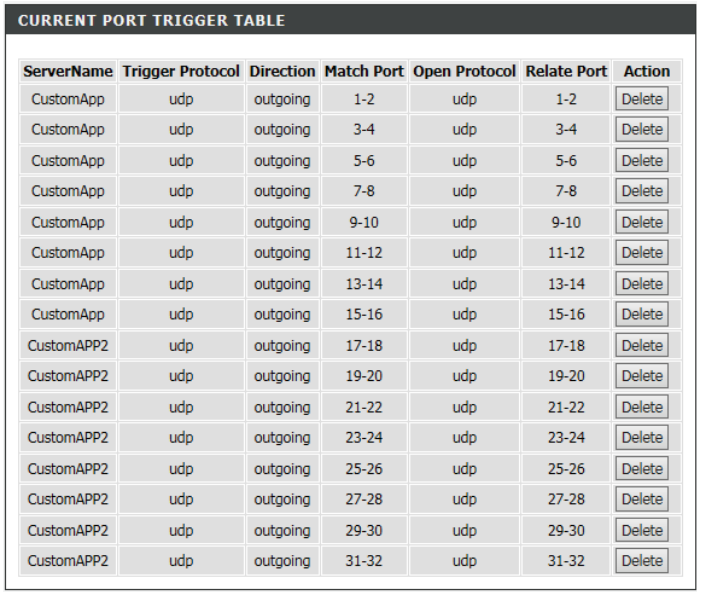
Click **Apply Changes** to have your changes take effect.

Port Triggering (continued)

An example Port Triggering Table is shown to the right.

CURRENT PORT TRIGGER TABLE

From the table you can see the current port triggering rules and their details. To delete a rule, select the **Delete** button in the last column of the rule.

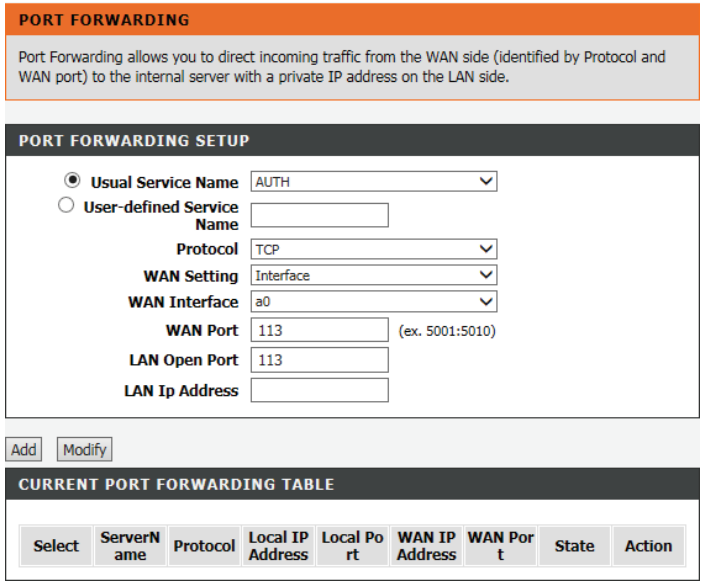


CURRENT PORT TRIGGER TABLE

ServerName	Trigger Protocol	Direction	Match Port	Open Protocol	Relate Port	Action
CustomApp	udp	outgoing	1-2	udp	1-2	Delete
CustomApp	udp	outgoing	3-4	udp	3-4	Delete
CustomApp	udp	outgoing	5-6	udp	5-6	Delete
CustomApp	udp	outgoing	7-8	udp	7-8	Delete
CustomApp	udp	outgoing	9-10	udp	9-10	Delete
CustomApp	udp	outgoing	11-12	udp	11-12	Delete
CustomApp	udp	outgoing	13-14	udp	13-14	Delete
CustomApp	udp	outgoing	15-16	udp	15-16	Delete
CustomAPP2	udp	outgoing	17-18	udp	17-18	Delete
CustomAPP2	udp	outgoing	19-20	udp	19-20	Delete
CustomAPP2	udp	outgoing	21-22	udp	21-22	Delete
CustomAPP2	udp	outgoing	23-24	udp	23-24	Delete
CustomAPP2	udp	outgoing	25-26	udp	25-26	Delete
CustomAPP2	udp	outgoing	27-28	udp	27-28	Delete
CustomAPP2	udp	outgoing	29-30	udp	29-30	Delete
CustomAPP2	udp	outgoing	31-32	udp	31-32	Delete

Port Forwarding

Port Forwarding allows you to direct incoming traffic from the WAN side (identified by Protocol and WAN port) to an internal server with a private IP address on the LAN side.



PORT FORWARDING SETUP

Well known Service: Commonly used protocols are pre-defined and can be easily selected.

User-defined Service: Name the rule you are about to define for your server.

Protocol: Select the protocol type to use with this service.

WAN Interface: Select the WAN Interface from which to forward ports.

WAN Port: Enter the WAN port number.

LAN Port: Enter the LAN port number.

LAN IP Address: Enter the IP address traffic is forwarded to.

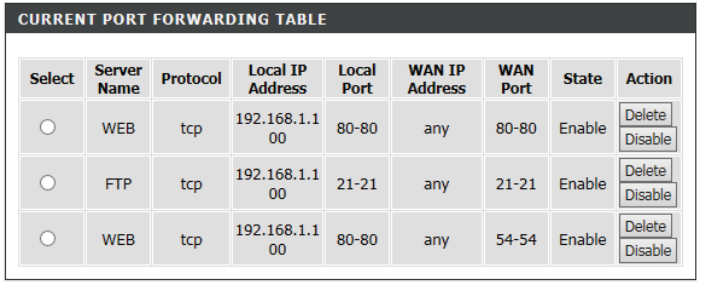
Click **Add** to add the new port forwarding rule. To modify an existing rule, select it using the radio selection button. The boxes of the Port Forwarding Setup section will populate with the rules parameters. Enter your changes and click **Modify**.

Port Forwarding (continued)

An example Port Forwarding Table is shown to the right.

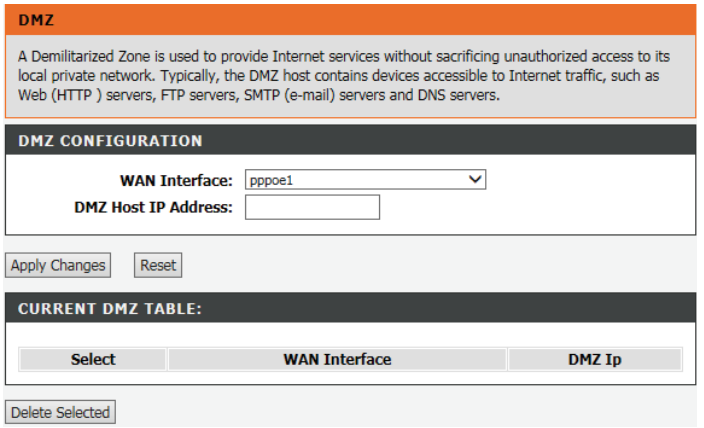
CURRENT PORT FORWARDING TABLE

From the table you can see the current port forwarding rules and their details. To disable a rule select the **Disable** button in the last column of the rule. To delete a rule, select the **Delete** button in the last column of the rule.



DMZ

This page allows you to manually configure the router's DMZ settings. Since some applications are not compatible with NAT, the device supports the use of a DMZ IP address for a single host on the LAN. This IP address is not protected by NAT and it is visible on the Internet with the correct type of software. Note that any client PC in the DMZ is exposed to various types of security risks. If you use DMZ, take measures (such as client-based virus protection) to protect the remaining client PCs on your LAN from possible contamination through DMZ.



DMZ CONFIGURATION

Select the **WAN Interface** to associate with a **DMZ Host IP address,** LAN IP address. Click **Apply Changes** when you are done or **Reset WAN Interface** to revert to the previously saved settings.

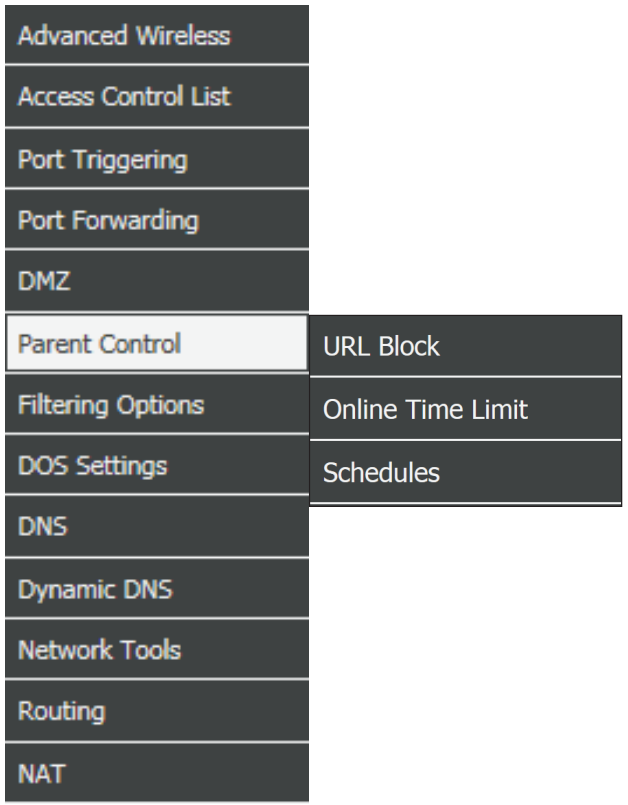
CURRENT DMZ TABLE

The currently assigned DMZ is displayed in this list. To delete the DMZ, select it using the radio button and press **Delete Selected**.

Parent Control

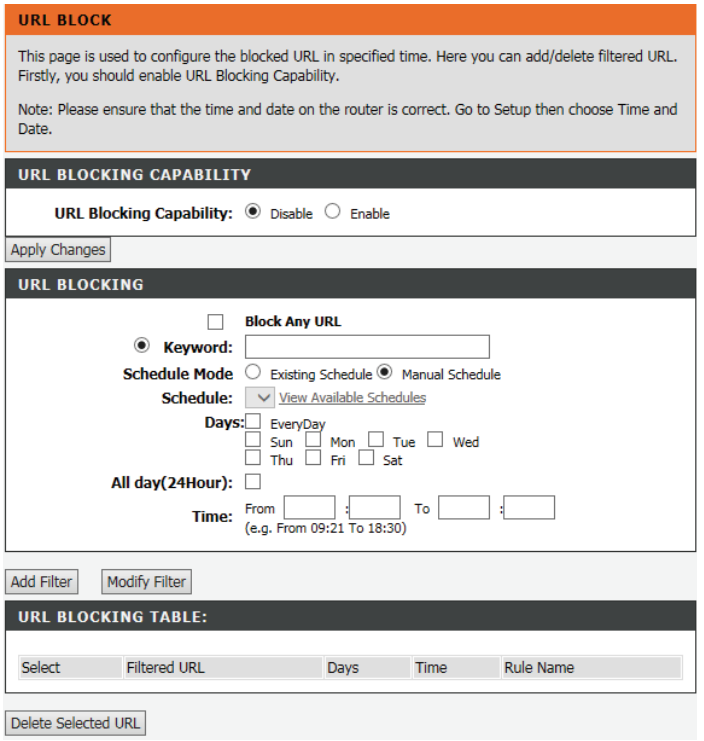
Hover your mouse over the **Parent Control** option on the vertical menu bar running along the left side to access:

URL Block
Online Time Limit
Schedules



URL Block

This page is used to configure URLs to be blocked during specific times. In order for this function to work as expected, the system time must be set correctly.



URL BLOCKING CAPABILITY

URL Blocking Capability: Check the radio button to enable URL blocking. Click **Apply Changes** to enable the feature and start adding rules.

URL BLOCKING

Block Any URL: Check the radio button to block all URLs.

Keyword: Enter a URL to be blocked.

Schedule Mode: Select either **Existing Schedule** or **Manual Schedule**. Refer to **Schedules** on page 76 for more information on creating schedules.

Days: If **Manual Schedule** is selected, select the days to apply the rule.

All day (24Hour): If **Manual Schedule** is selected, the rule will run 24 hours a day.

Time: If **All Day** is not selected, enter start and end time to apply the rule. Use a 24 hour format.

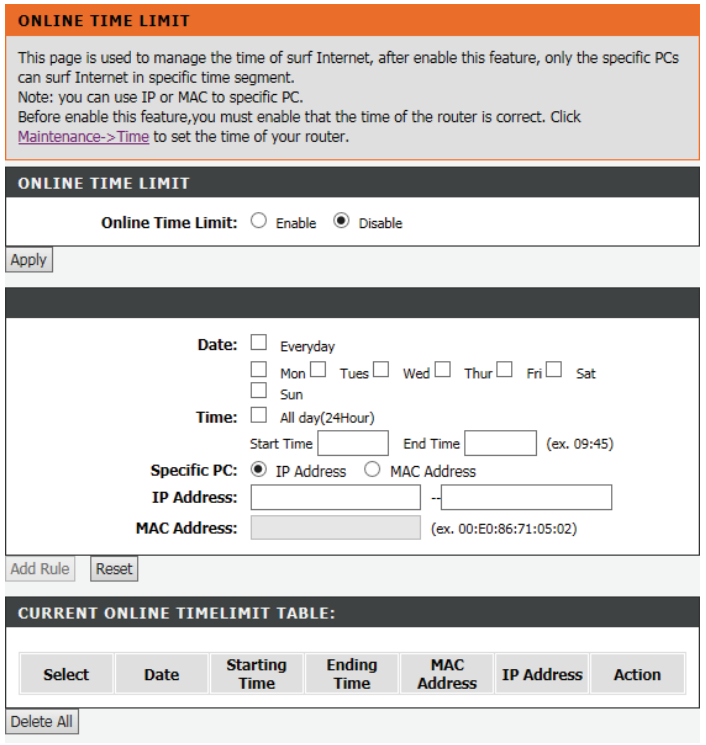
When you are satisfied with your URL blocking rule, click **Add Filter**. To edit an existing rule, select if from the **URL Blocking Table** and click **Modify Filter**.

URL BLOCKING TABLE

This table displays the current URL Blocking rules in effect. To delete an existing rule, select it from the list and click **Delete Selected URL**.

Online Time Limit

This page allows Internet browsing time to be set for a group of devices or on a per device basis. In order for this function to work as expected, the system time must be set correctly.



ONLINE TIME LIMIT

Online Time Limit: Check the radio button to enable the online time limit feature. Click **Apply** to enable the feature and start adding rules.

Date: Select the days to apply the time limit.

Time: If **All Day** is not selected, enter start and end time to apply the rule. Use a 24 hour format.

Specific PC: Select a PC to apply an online time limit to by either IP Address or MAC Address.

IP Address: Enter a single IP address or IP address range to apply the rule to.

MAC Address: Enter a MAC Address to apply the rule to.

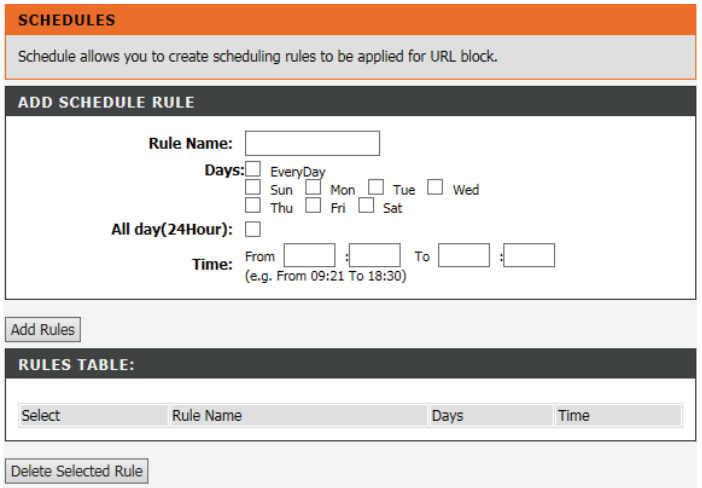
When you are satisfied with your time limit rules, click **Add Rules**. To clear the fields and start over, click **Reset**.

CURRENT ONLINE TIMELIMIT TABLE:

This table displays the current online time limit rules in effect. To delete all the rules, click **Delete All**.

Schedules

This page allows you to input schedule rules to be used for the URL block feature.



ADD SCHEDULE RULE

Rule Name: Enter a name for the rule.

Days: Select the days to apply the rule.

All day (24Hour): Select to have the rule run 24 hours a day.

Time: If **All Day** is not selected, enter start and end time to apply the rule. Use a 24 hour format.

When you are satisfied with your time limit rules, click **Add Rules**. To clear the fields and start over, click **Reset**.

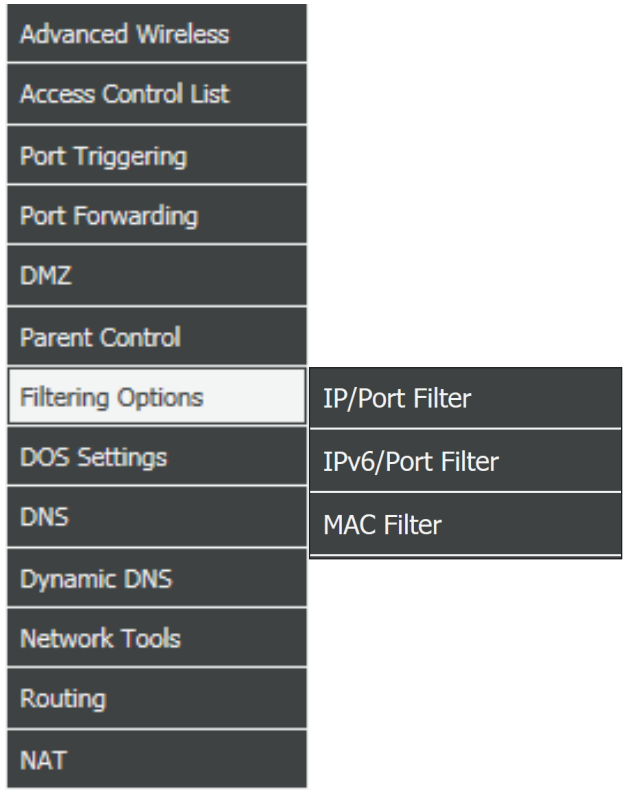
RULES TABLE:

This table displays the current rules available for selection. To delete a rule, select it and click **Delete Selected Rule**.

Filtering Options

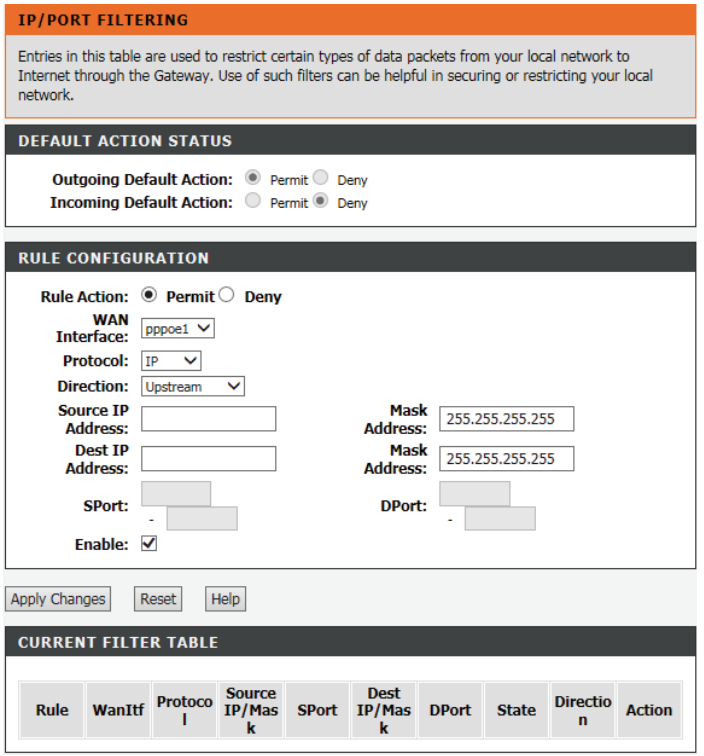
Hover your mouse over the **Filtering Options** option on the vertical menu bar running along the left side to access:

IP/Port Filter
IPv6/Port Filter
MAC Filter



IP/Port Filter

The IP/Port filter is used to restrict or allow certain types of data packets through the gateway. These filters are helpful in securing or restricting traffic on your local network.



DEFAULT ACTION STATUS

Outgoing Default Action: Select whether to **Permit** or **Deny** data packets to flow out of the WAN interface. The default setting is **Permit**.

Incoming Default Action: Select whether to **Permit** or **Deny** data packets to flow into the WAN interface. The default setting is **Deny**.

RULE CONFIGURATION

To create a rule, fill out the following parameters.

Rule Action: Select whether this rule will **Permit** or **Deny** data packets.

WAN Interface: Select the WAN interface.

Protocol: Select the protocol type: **IP, ICMP, TCP,** or **UDP**.

Source IP Address & Mask Address: Enter the source IP address and subnet mask for the rule.

Destination IP Address & Mask Address: Enter the destination IP address and subnet mask for the rule.

SPort: Enter the source port number if **TCP** or **UDP** is selected.

DPort: Enter the destination port number if **TCP** or **UDP** is selected.

IP/Port Filter (continued)

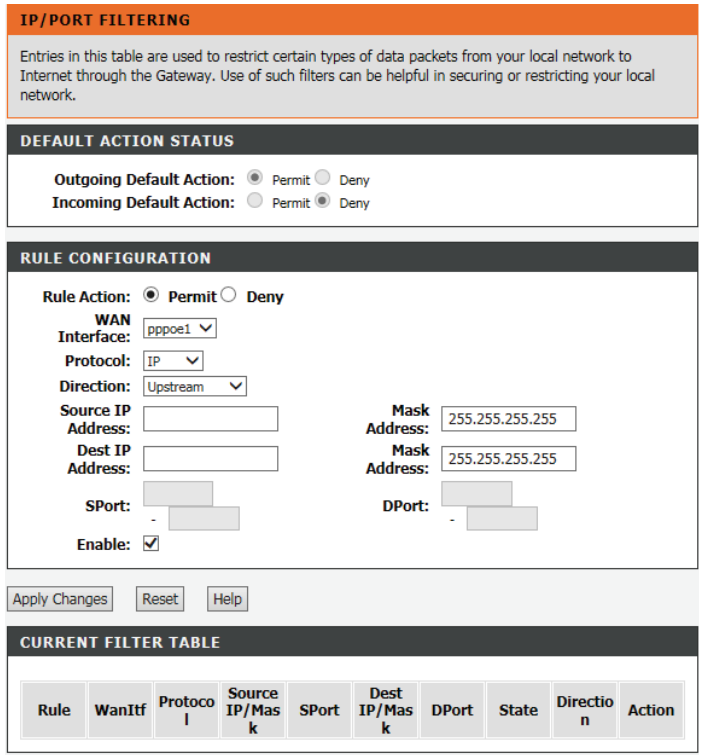
RULE CONFIGURATION (CONTINUED)

Enable: Check to enable the rule

When you are satisfied with your IP/Port Filtering rule, click **Apply Changes** to add it to the **Current Filter Table**. To clear the fields and start over, click **Reset**. To see help on creating rules, click **Help**.

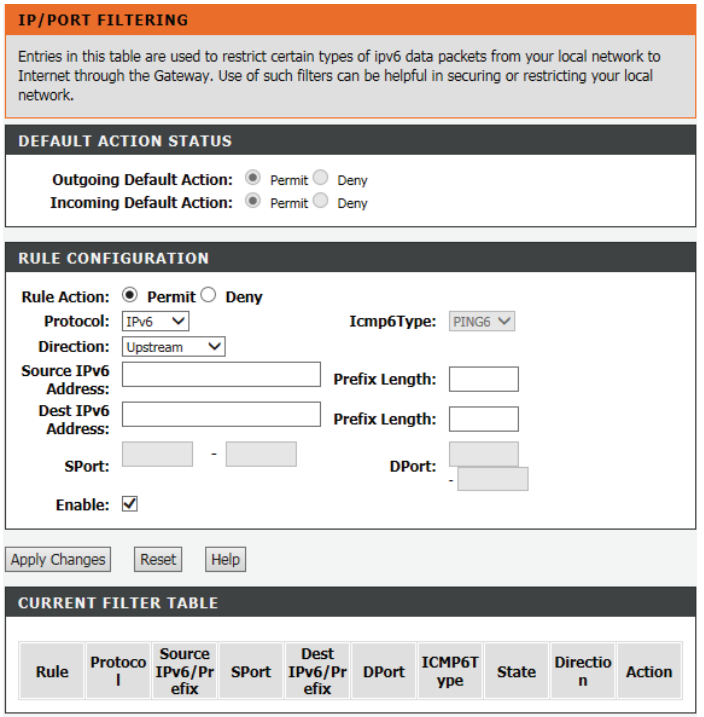
CURRENT FILTER TABLE

The current filter rules in effect are listed here. Click **Disable/Enable** to disable or enable a rule. Click **Delete** to delete a rule.



IPv6/Port Filter

The IPv6/Port filter is used to restrict or allow certain types of IPv6 data packets through the gateway. These filters are helpful in securing or restricting traffic on your local network.



DEFAULT ACTION STATUS

Outgoing Default Action: Select whether to **Permit** or **Deny** data packets to flow out of the WAN interface. The default setting is **Permit**.

Incoming Default Action: Select whether to **Permit** or **Deny** data packets to flow into the WAN interface. The default setting is **Permit**.

RULE CONFIGURATION

To create a rule, fill out the following parameters.

Rule Action: Select whether this rule will **Permit** or **Deny** data packets.

Protocol: Select the protocol type: **IPv6, ICMP6, TCP,** or **UDP**.

Icmp6Type: If **ICMP6** is selected, select **Ping6**.

Direction: Select the direction, either **Upstream** or **Downstream**.

Source IP Address & Prefix Length: Enter the source IPv6 address and prefix length for the rule.

Destination IP Address & Prefix Length: Enter the destination IP address and subnet mask for the rule.

SPort: Enter the source port number if **TCP** or **UDP** is selected.

DPort: Enter the destination port number if **TCP** or **UDP** is selected.

IPv6/Port Filter (continued)

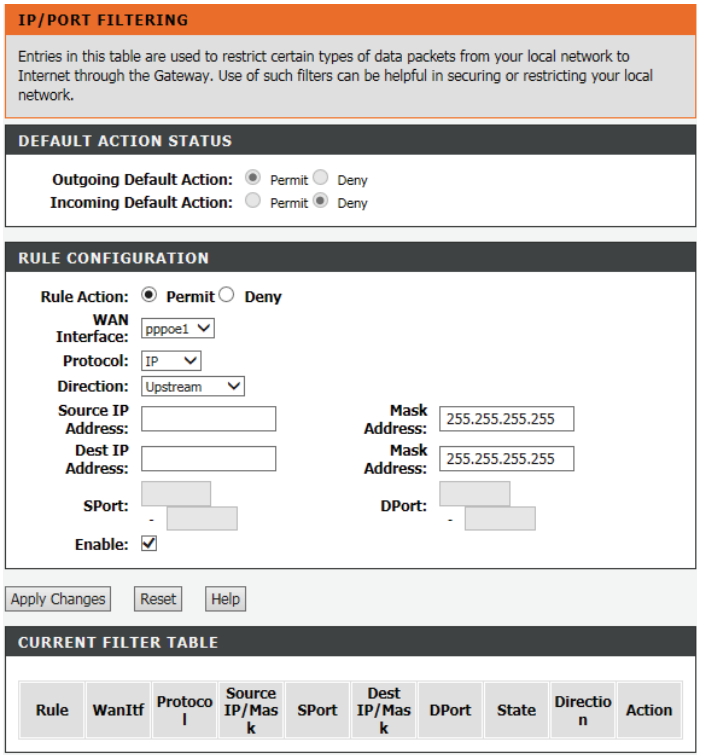
RULE CONFIGURATION (CONTINUED)

Enable: Check to enable the rule

When you are satisfied with your IP/Port Filtering rule, click **Apply Changes** to add it to the **Current Filter Table**. To clear the fields and start over, click **Reset**. To see help on creating rules, click **Help**.

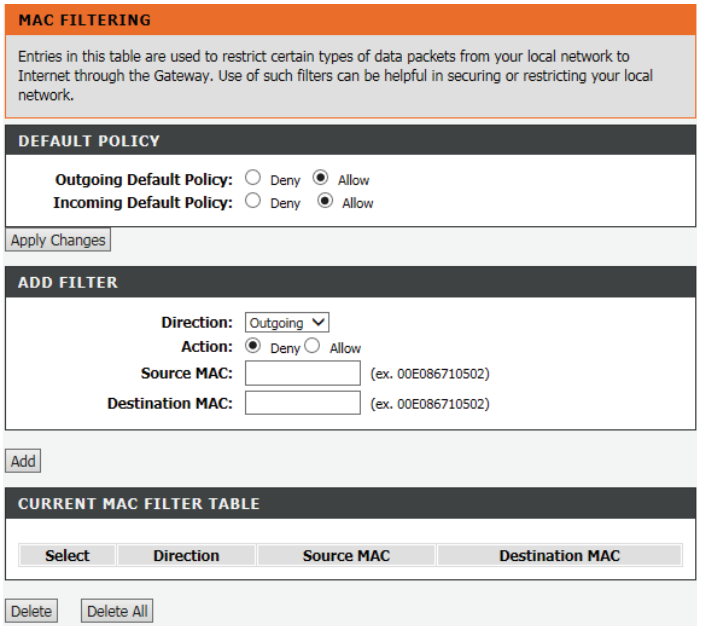
CURRENT FILTER TABLE

The current filter rules in effect are listed here. Click **Disable/Enable** to disable or enable a rule. Click **Delete** to delete a rule.



MAC Filter

The MAC filter is used to restrict or allow certain types of Ethernet Frames through the gateway based on their source or destination MAC address. These filters are helpful in securing or restricting traffic on your local network.



DEFAULT POLICY

Outgoing Default Action: Select whether to **Deny** or **Allow** frames to flow out of the WAN interface. The default setting is **Allow**.

Incoming Default Action: Select whether to **Deny** or **Allow** frames to flow into the WAN interface. The default setting is **Allow**.

ADD FILTER

To create a rule, fill out the following parameters.

Direction: Select whether this rule will apply to **Outgoing** or **Incoming** traffic.

Action: Select whether to **Deny** or **Allow** frames.

You may create a rule to apply to either a Source MAC address, Destination MAC address, or both. Broadcast MAC addresses may not be filtered.

Source MAC: Enter the source **MAC** address to filter.

Destination Mac: Enter the destination **MAC** address.

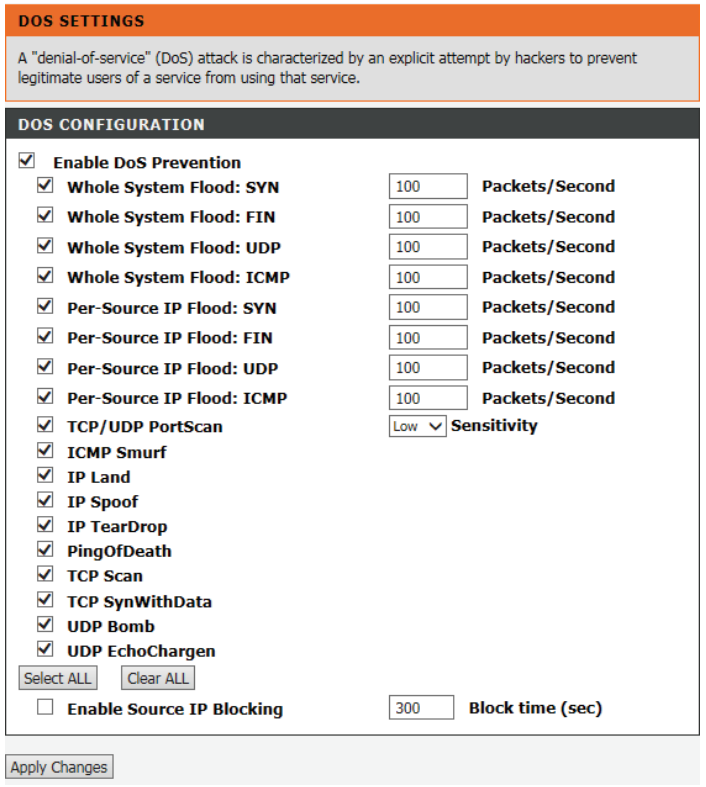
When you are satisfied with your MAC Filtering rule, click **ADD.**

CURRENT MAC FILTER TABLE

The current list of MAC filters are displayed here. To delete a filter, select it from the list and click **Delete**. To delete all the filters, click **Delete All**.

DOS Settings

A denial-of-service (DoS) attack is characterized by an explicit attempt by attackers to prevent legitimate users of a service from using that service. Attacks can be malicious security breaches or unintentional network issues that render the router unusable Attack checks allow you to manage WAN security threats such as continual ping requests and discovery via ARP scans. Certain Denial-of-Service (DoS) attacks can be blocked. These attacks, if uninhibited, can use up processing power and bandwidth and prevent regular network services from running normally. Thresholds can be configured to temporarily restrict traffic from the offending source.



DOS CONFIGURATION

Enable DoS Prevention: Check this box to enable DoS prevention. Types of attacks may be individually enabled, along with their thresholds. You may enable or disable all the anti-attack types by clicking **Select ALL**/**Clear All**.

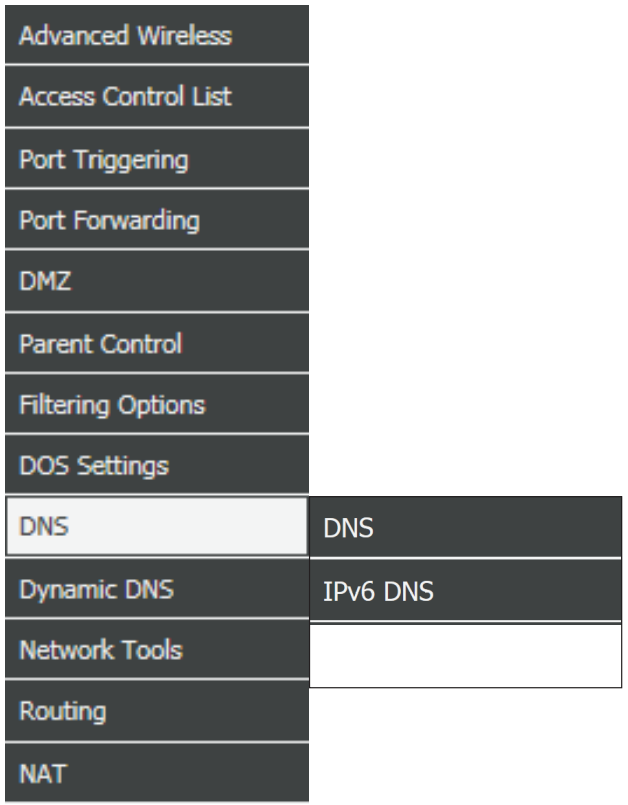
Enable Source IP Blocking: You may block source IP addresses for a set period of time.

Click **Apply Changes** to have your changes take effect.

DNS

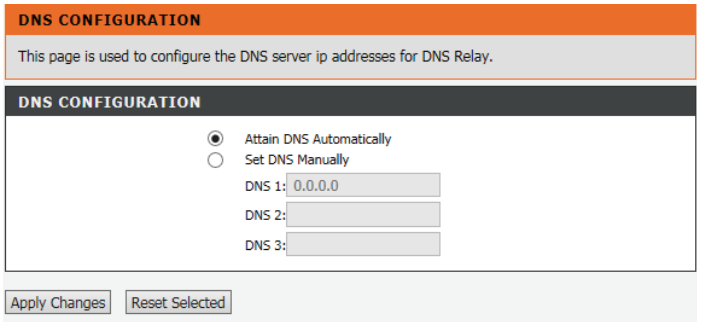
Hover your mouse over the **DNS** option on the vertical menu bar running along the left side to access:

DNS
IPv6 DNS



DNS

This page allows you to manually configure the router's DNS settings.



Domain Name System (DNS) is an Internet service that translates domain names into IP addresses. Because domain names are alphanumeric, they are easier to remember. The Internet, however, is actually based on IP addresses. Each time you use a domain name, a DNS service must translate the name into the corresponding IP address. For example, the domain name www.example.com might be translated to 198.105.232.4.

The DNS system is, in fact, its own network. If one DNS server does not know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

DNS CONFIGURATION

If you are using the device for DHCP service on the LAN or if you are using DNS servers on the ISP network, select **Attain DNS Automatically**.

If you have alternate DNS IP addresses, select **Set DNS Manually** and enter them into the **DNS 1**, **DNS 2**, and **DNS 3** fields.

Click **Apply Changes** when you are done or **Reset Selected** to revert to your previously saved settings.

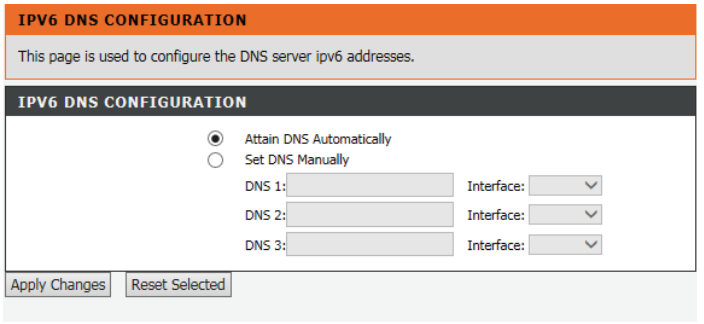
IPv6 DNS

IPV6 DNS CONFIGURATION

If you are using the device for DHCP service on the LAN or if you are using DNS servers on the ISP network, select **Attain DNS Automatically**.

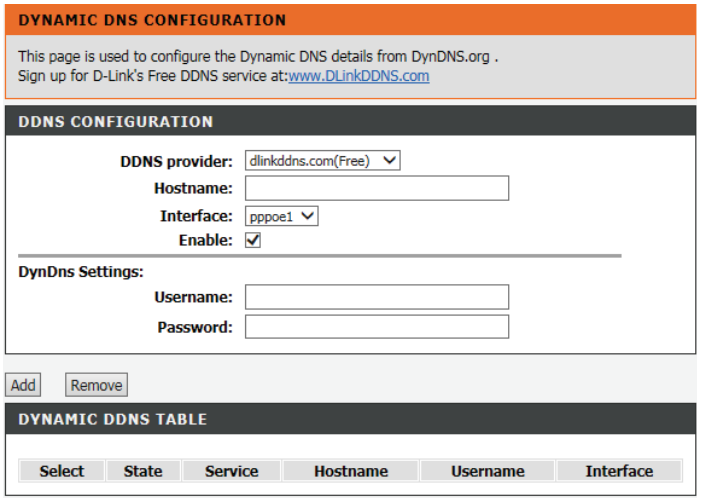
If you have alternate DNS IP addresses, select **Set DNS Manually** and enter them into the **DNS 1**, **DNS 2**, and **DNS 3** fields.

Click **Apply Changes** when you are done or **Reset Selected** to revert to your previously saved settings.



Dynamic DNS

This page allows you to configure the router's Dynamic DNS settings.



The DDNS (Dynamic Domain Name System) feature allows you to host a server (e.g. a Web, FTP, or game server) using a domain name that you have purchased (www.yourdomain.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your domain name to connect to your server no matter what your IP address is.

DDNS CONFIGURATION

DDNS provider: Select one of the Dynamic DNS organizations from the menu.

Hostname: Enter the hostname you registered with the Dynamic DNS provider.

Interface: Select the appropriate interface.

Enable: Check this box to enable DDNS.

DynDNS Settings

Username: Enter the username for your Dynamic DNS account.

Password: Enter the password for your Dynamic DNS account.

Click **Add** when you are done. To remove an existing DDNS entry, select it from the table below and click the **Remove** button.

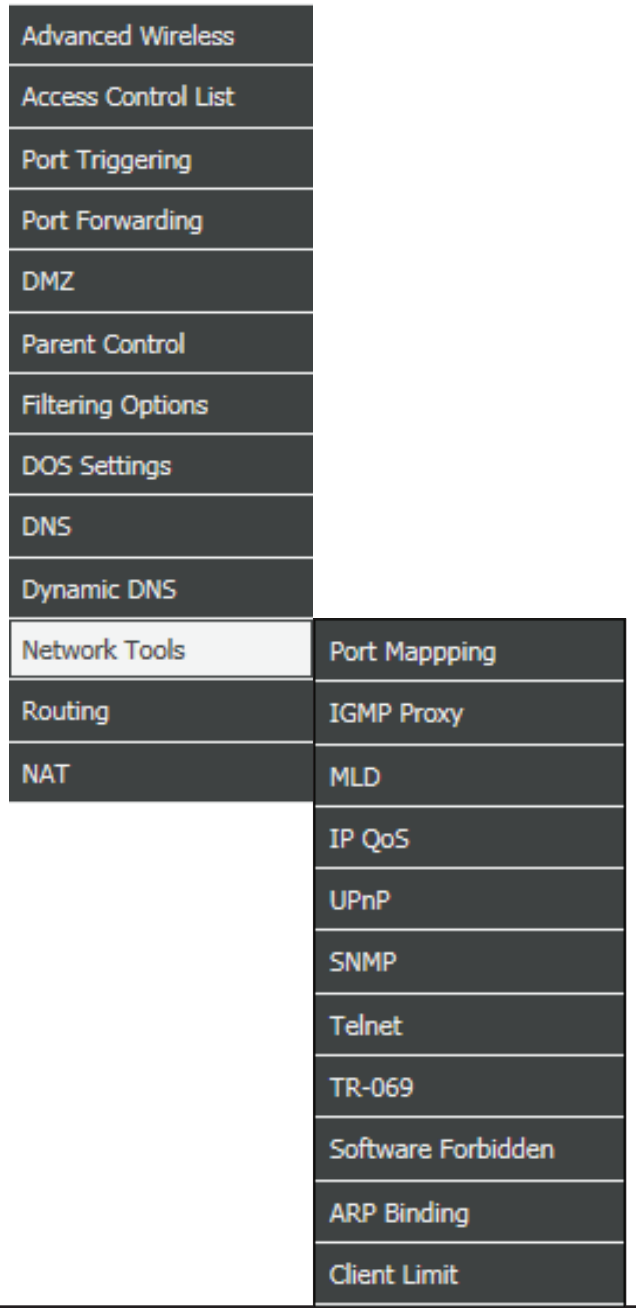
DYNAMIC DDNS TABLE

This list displays the current dynamic Dynamic DNS settings.

Network Tools

Hover your mouse over the **Network Tools** option on the vertical menu bar running along the left side to access:

Port Mapping
IGMP Proxy
MLD
IP QoS
UPnP
SNMP
Telnet
TY-069
Software Forbidden
ARP Binding
Client Limit



Port Mapping

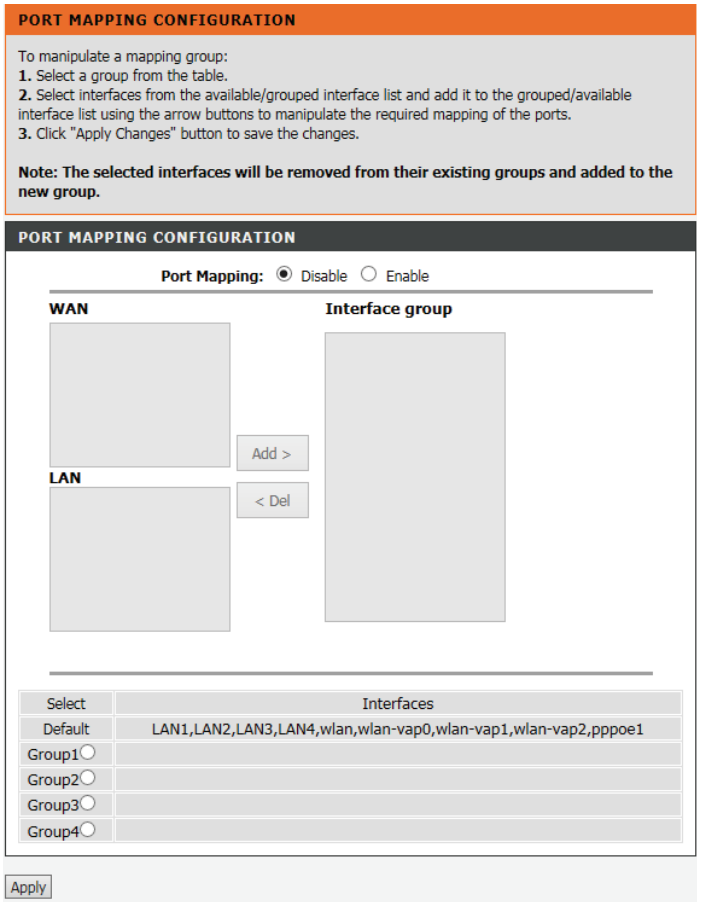
From the Port Mapping page you can bind the WAN interfaces and the LAN interfaces to the same group.

PORT MAPPING SETUP

Port Mapping: **Enable/Disable** port mapping.

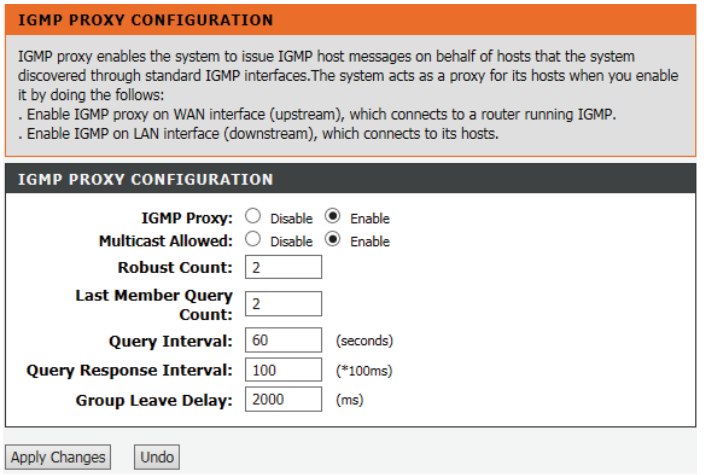
The procedure for manipulating a mapping group is as follows:

Step 1 Select a group from the table.
Step 2 Select interfaces from the WAN and LAN interface list and add them to interface group list.
Step 3 Click **Apply** to save the changes.



IGMP Proxy Configuration

Internet Group Management Protocol (IGMP) proxy enables the system to issue IGMP host messages on behalf of hosts that the system discovered through standard IGMP interfaces. The system acts as a proxy for its hosts after you enable it.



IGMP PROXY CONFIGURATION

IGMP Proxy: Select to **Enable** or **Disable** the IGMP proxy. **Enable** is the default.

Multicast Allowed: Select to **Enable** or **Disable** Multicast. **Enable** is the default.

Robust Count: Set robustness value to account for packet loss on congested networks.

Last Member Query Count: Set IGMP query count. 2 is the default.

Query Interval: Set IGMP query interval. 2 is the default.

Query Response Interval: Set the IGMP response interval time in seconds. 60 seconds is the default.

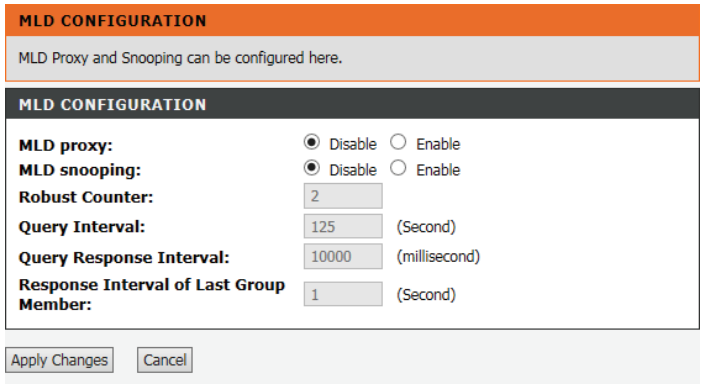
Query Response Interval: Set the IGMP query response interval in ms. 100 ms is the default.

Group Leave Delay: Set the IGMP group leave delay in ms. 2000 ms is the default.

Click **Apply Changes** when you are done or **Undo** to revert to your previous settings.

MLD Configuration

Multicast Listener Discovery (MLD) is part of IPv6 which allows IPv6 multicast to be dynamically routed only to relevant hosts through unicast.



MLD PROXY CONFIGURATION

MLD Proxy: Select to **Enable** or **Disable** the MLD proxy. **Disable** is the default.

MLD Snooping: Select to **Enable** or **Disable** MLD Snooping. **Disable** is the default.

Robust Count: Set robustness value to account for packet loss on congested networks. 2 is the default.

Query Interval: Set MLD query interval in seconds. 125 is the default.

Query Response Interval: Set the MLD response interval time in milliseconds. 10,000 milliseconds is the default.

Response Interval of Last Group: Set the Response Interval of Last Group in seconds. 1 second is the default.

Click **Apply Changes** when you are done or **Undo** to revert to your previous settings.

IP QoS

From this page you can configure the Quality of Service settings on your DSL-124 to help improve your browsing experience. Setting up QoS requires familiarity with networking technology outside the scope of this document, as well as an understanding of the traffic on your network.

IP QOS CONFIGURATION

Click the radio button to enable or disable IP QoS. If enabled, choose whether to use **WFQ(4:3:2:1)** or **strict prior**.

Click **Apply Changes** to begin using QoS.

QOS RULE LIST & QOS RULE LIST(CONTINUE)

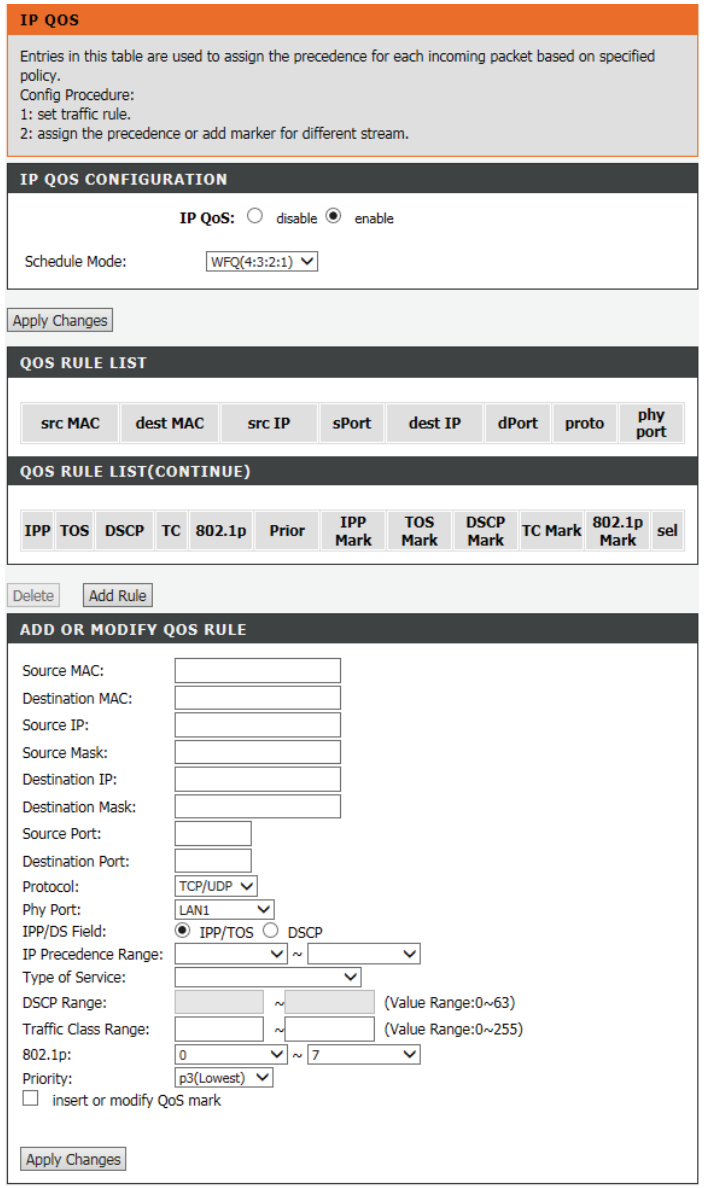
The table shows the current QoS rules currently in effect.

Click **Add Rule** to add a rule. To modify a rule, select it from the table. The Add or Modify QoS Rule box will appear and the fields will populate with the rule credentials. To delete a rule, select it from the list and click **Delete Rule**.

ADD OR MODIFY QOS RULE

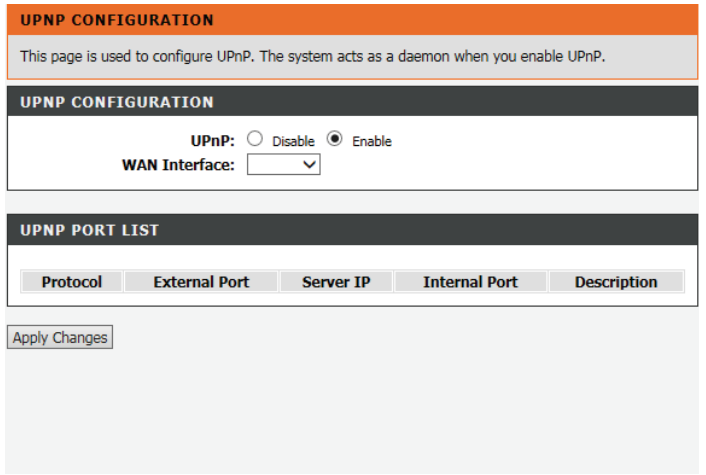
Enter the criteria for your QoS rule.

Click **Apply Changes** to add your rule to the QoS rule list.



UPnP

This page is used to configure UPnP. The system acts as a daemon after you enable it. UPnP helps to automatically configure software and devices on your network to access the resources they require.



UPNP SETUP

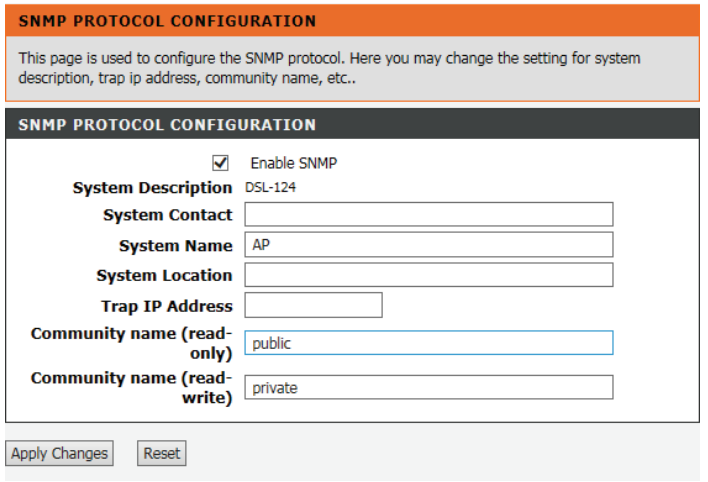
Click the radial button to enable or disable Universal Plug and Play (**UPnP**).

Check the box to **Enable UPnP**.

Click **Apply Changes** when you are done.

SNMP

This page is used to configure UPnP. The system acts as a daemon after you enable it. UPnP helps to automatically configure software and devices on your network to access the resources they require.



UPNP SETUP

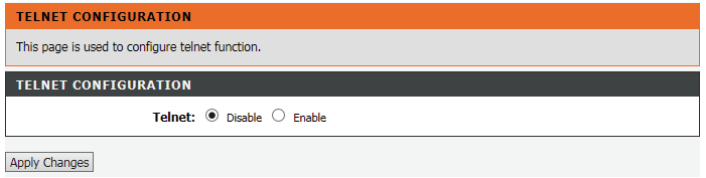
Click the radial button to enable or disable Universal Plug and Play (**UPnP**).

Check the box to **Enable UPnP**.

Click **Apply Changes** when you are done.

Telnet

This page is used to configure Telnet. Telnet is a terminal-bsaed remote administration tool. This function is provided for compatibility only, as the Telnet protocol is extremely insecure. This feature is not recommended for normal use.



UPNP SETUP

Click the radial button to enable or disable Telnet.

Check the box to **Enable**.

Click **Apply Changes** when you are done.

TR-069

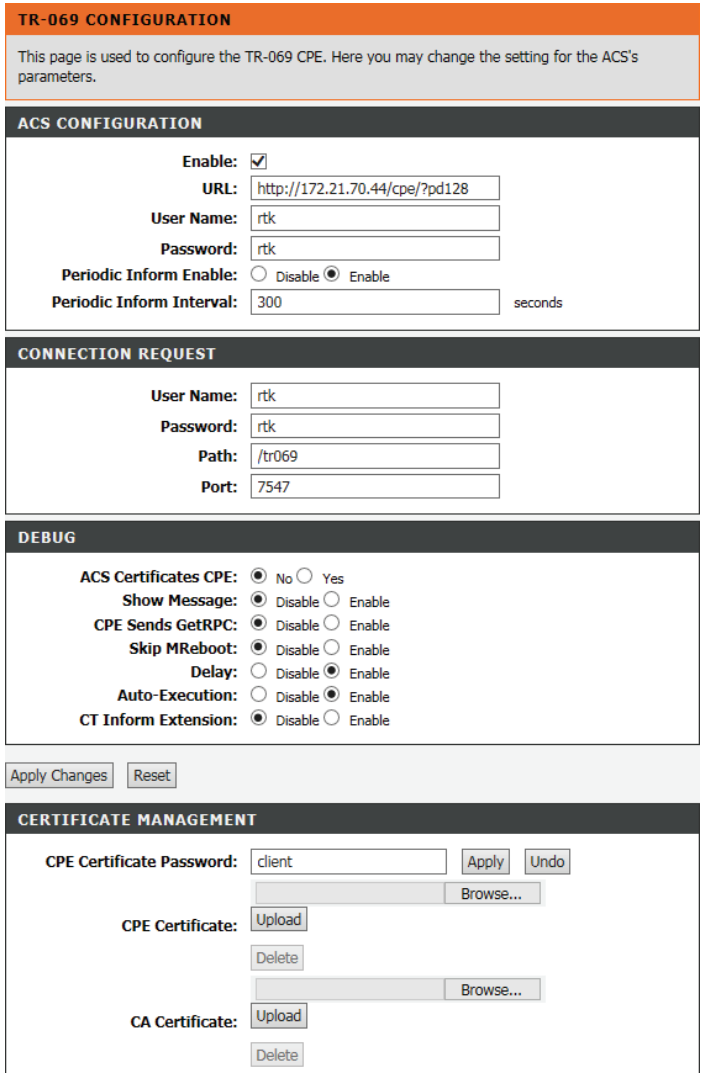
TR-069 CLIENT CONFIGURATION

To configure the WAN management protocol (TR-069), click **TR-069**.

TR-069 allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics on this device.

Check the box to **Enable WAN Management Protocol (TR-069)**. This will unlock the TR-069 configuration options.

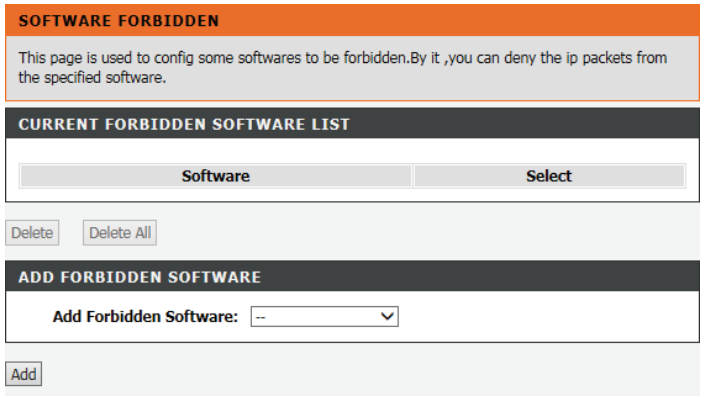
Click **Apply Changes** when you are done.



Software Forbidden

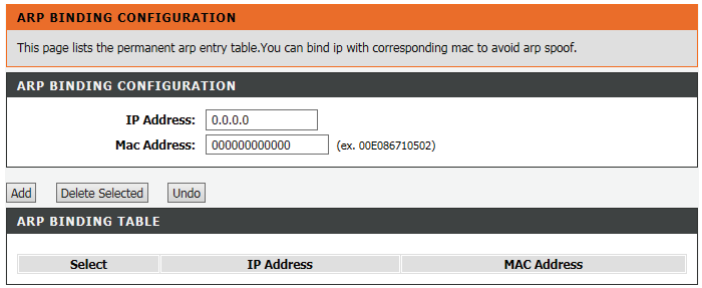
FORBIDDEN SOFTWARE

Your DSL-124 is able to block specific software across your entire network. If your software is supported, select it from the drop down menu and click add. Note that only certain pieces of software can be blocked by this feature.



ARP Binding

This page allows you to bind an IP address to a MAC address.



ARP BINDING CONFIGURATION

IP Address: Enter the IP address to bind the MAC address to.

MAC Address: Enter the MAC address to have bound with an IP address.

Once you have entered the IP address to bind to a MAC address, click **Add**.

To delete an ARP binding, select it from the ARP binding table and click **Delete Selected**.

To undo your changes, click **Undo**.

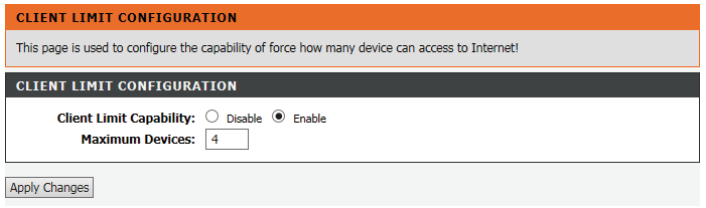
ARP BINDING TABLE

The table shows a list of currently bound ARP addresses.

Client Limit

CLIENT LIMIT CONFIGURATION

Select **Enable** to limit the maximum number of devices on your network. You can specify how many device can access your network in **Maximum Devices**.

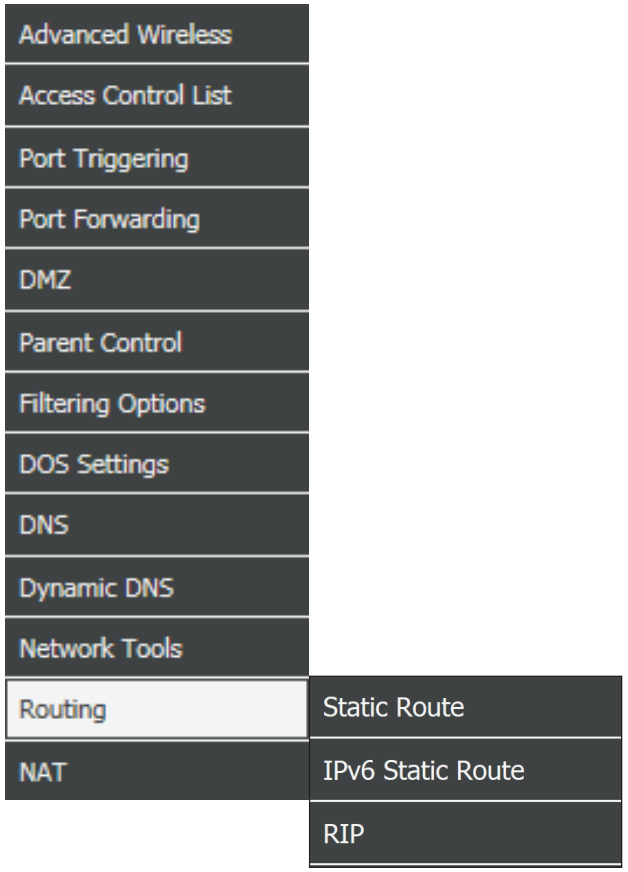


Click **Apply Changes** when you are done.

Routing

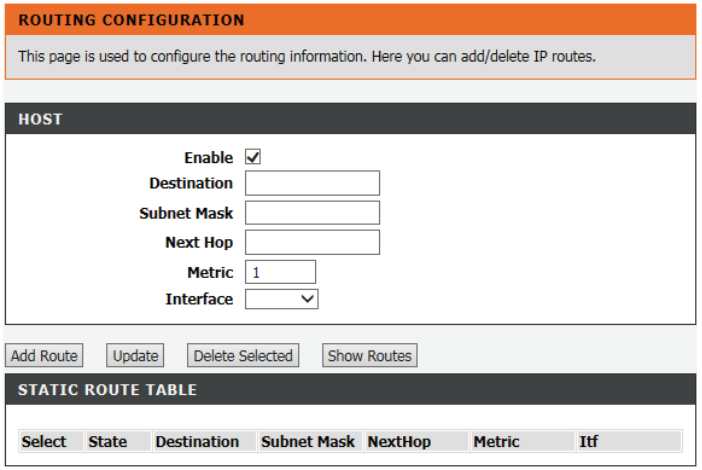
Hover your mouse over the **Routing** option on the vertical menu bar running along the left side to access:

Static Routing
IPv6 Static Route
RIP



Static Routing

This section allows you to set up static routes for your network.



HOST

Enable: Check this box to enable static routing.

Destination: Enter the IP address of the destination device.

Subnet Mask: Enter the subnet mask of the destination device.

Net Hop: Enter the IP address of the next hop in the IP route to the destination device.

Metric: The metric cost for the destination.

Interface: Select the interface for the specified route.

Once you have entered your Static Route Criteria, click **Add Route**.

To update an existing route, select it from the table below, make your adjustments and click **Update.**

To delete a static route, select it from the table and click **Delete Selected**.

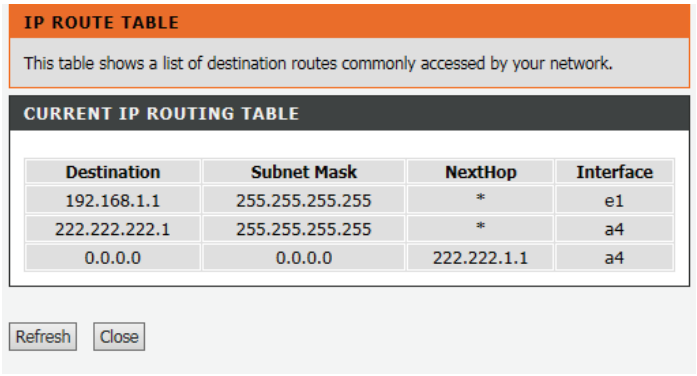
To see the current IP routes, click **Show Routes.**

STATIC ROUTE TABLE

The table shows a list of currently defined static routes.

Static Routing (Continued)

To see the current IP routes, click **Show Routes**. A window will pop-up with the current IP route table.



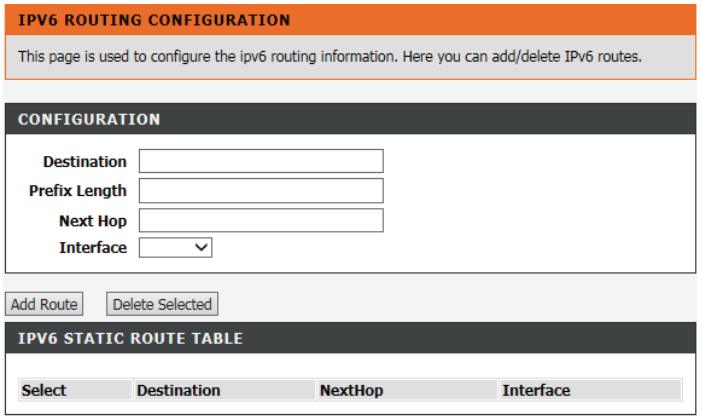
CURRENT IP ROUTING TABLE

The table shows a list of all the currently defined routes.

You may either **Refresh** or **Close** this pop-up window.

IPv6 Static Route

This section allows you to set up IPv6 static routes for your network.



CONFIGURATION

Destination: Enter the IPv6 address of the destination device.

Prefix Length: Enter the subnet prefix.

Next Hop: Enter the IPv6 address of the next hop in the IP route to the destination device.

Interface: Select the interface for the specified route.

Once you have entered your Static Route Criteria, click **Add Route**.

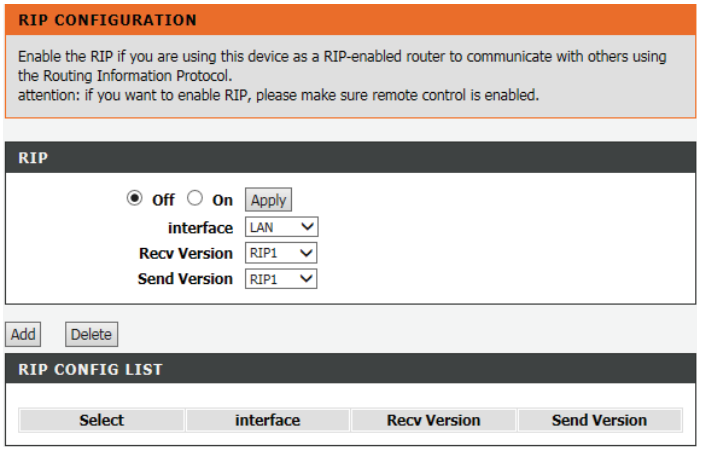
To delete a static route, select it from the table and click **Delete Selected**.

IPV6 STATIC ROUTE TABLE

The table shows a list of currently defined static routes.

RIP

From this page advanced users can configure the router to use the Routing Internet Protocol (RIP). RIP is an Internet protocol you can set up to share routing table information with other routing devices on your LAN, at your ISP's location, or on remote networks connected to your network via the ADSL line.



RIP

To enable or disable RIP, select **Off** or **On** and click **Apply.**

Destination: Enter the IPv6 address of the destination device.

Interface: Select the interface to apply the RIP rule to.

Recv Version: Select the version of RIP protocol to use when receiving RIP updates. The options are **RIP1**, **RIP2**, or **Both.**

Send Version: Select the version of RIP protocol to use when sending RIP updates. The options are **RIP1** or **RIP2**.

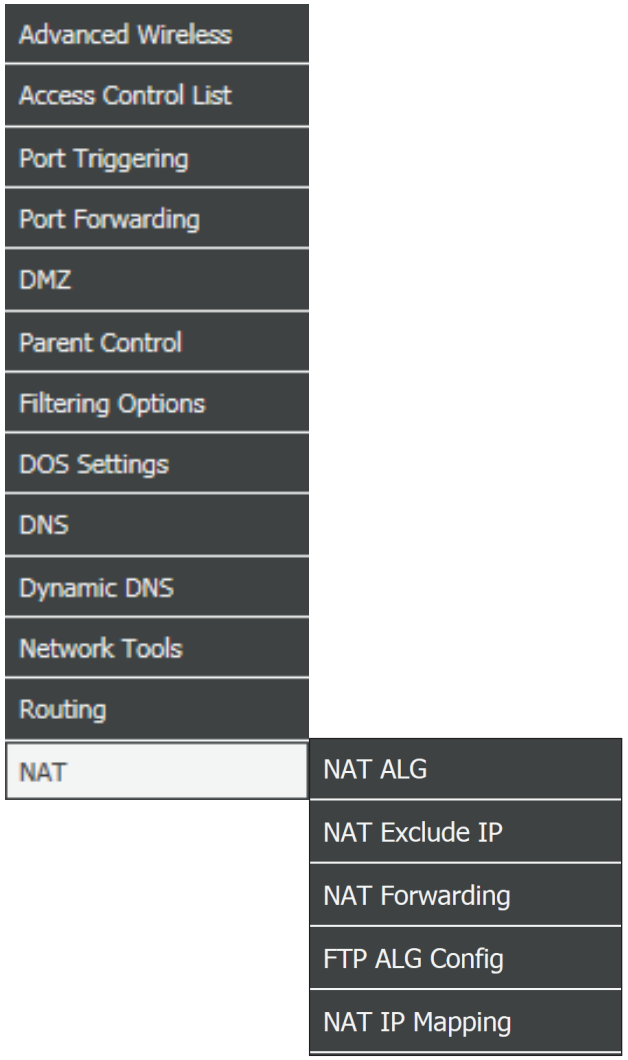
Once you have entered your RIP Criteria, click **Add**.

To delete a RIP rule, select it from the table and click **Delete**.

NAT

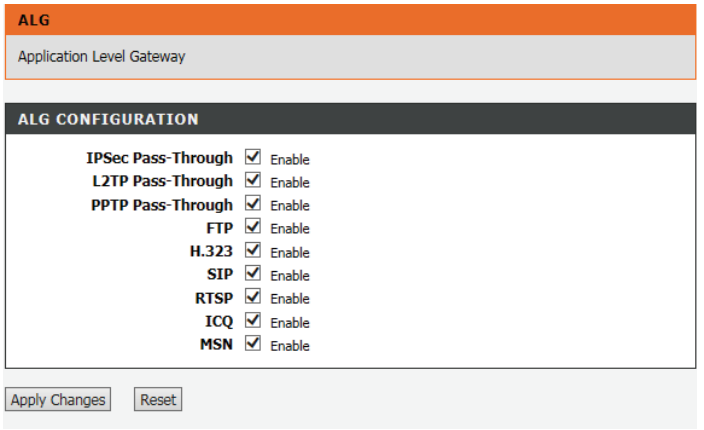
Hover your mouse over the **NAT** option on the vertical menu bar running along the left side to access:

NAT ALG
NAT Exclude IP
NAT Forwading
FTP ALG Config
NAT IP Mapping



NAT ALG

Application Level Gateways (ALGs) are security components that enhance the firewall and NAT support of this router to seamlessly support application layer protocols. In some cases enabling the ALG will allow the firewall to use dynamic ephemeral TCP/ UDP ports to communicate with the known ports a particular client application (such as H.323 or RTSP) requires, without which the admin would have to open large number of ports to accomplish the same support. Because the ALG understands the protocol used by the specific application that it supports, it is a very secure and efficient way of introducing support for client applications through the router's firewall.



ALG CONFIGURATION

Check or un-check the boxes next to the protocols to enable or disable them.

Click **Apply Changes** when you are done.

NAT Exclude IP

CONFIG

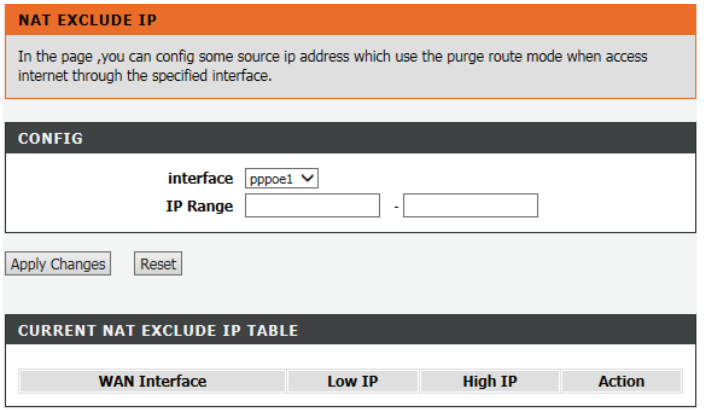
Interface: Select the interface to apply the exclusion to.

IP Range: Enter the IP address range to apply the exclusion to.

Click **Apply Changes** when you are done or **Reset** to undo your changes.

CURRENT NAT EXCLUDE IP TABLE

The current list of NAT ALG exceptions is listed here. To remove an exclusion, select it from the table and click **Delete**.



NAT Forwarding

SETTINGS

Local IP Address: Enter the local IP address.

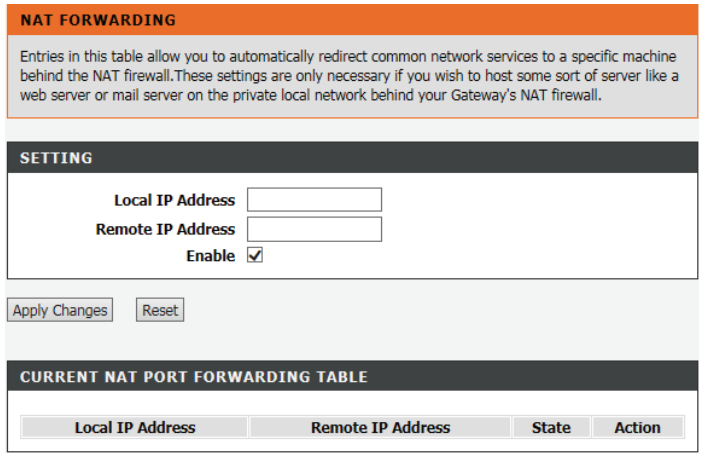
Remote IP Address: Enter the remote IP address.

Enable: Check the box to enable NAT Forwarding.

Click **Apply Changes** when you are done or **Reset** to undo your changes.

CURRENT NAT PORT FORWARDING TABLE

The current list of NAT Port Forwarding table is listed here. To remove an exclusion, select it from the table and click **Delete**.



FTP ALG Config

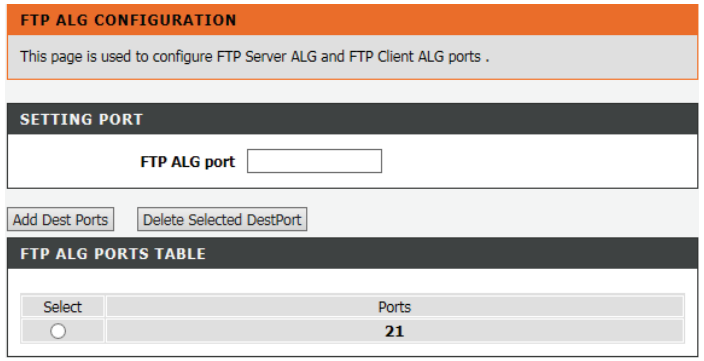
SETTING PORT

FTP ALG Port: Enter the FTP ALG port.

Click **Add Dest Ports** when you are done. To delete a currently assigned FTP ALG port, select it from the table and click the **Delete Selected Dest Port** button.

FTP ALG PORTS TABLE

The current list of FTP ALG ports is displayed.



NAT IP Mapping

SETTING PORT

Type: Select the type of NAT IP mapping. The available options are **One-to-Many**, **Many-to-One**, **Many-to-many**, or **One-to-One**. The available boxes change depending upon your selection.

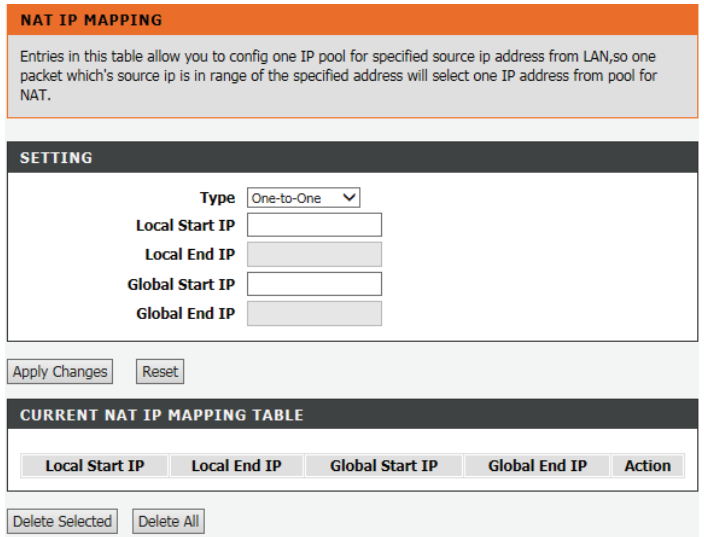
Local Start IP: Enter the Local Start IP.

Local End IP: Enter the Local End IP.

Global Start IP: Enter the Global Start IP.

Global End IP: Enter the Global End IP.

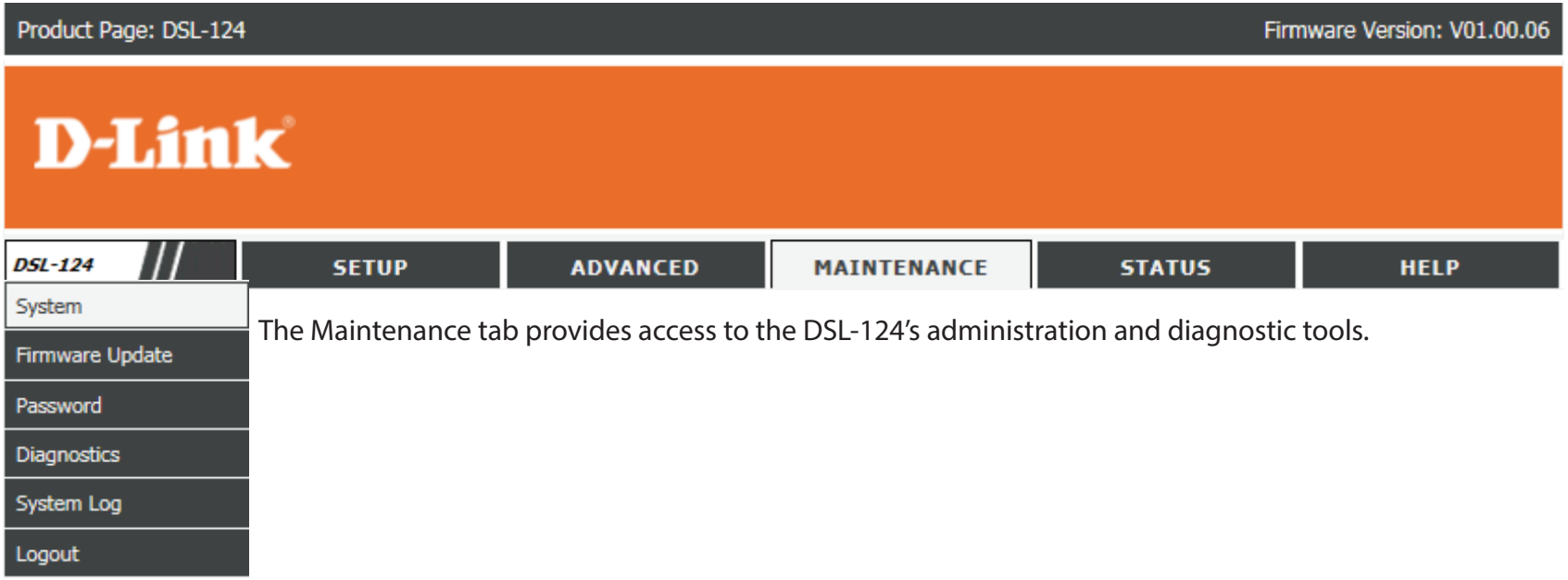
Click **Apply Changes** when you are done or **Reset** to undo your changes.



CURRENT NAT IP MAPPING TABLE

The current NAT IP Mapping table is displayed. To remove a mapping, select it and click the **Delete Selected** button. To remove all the entries click the **Delete All** button.

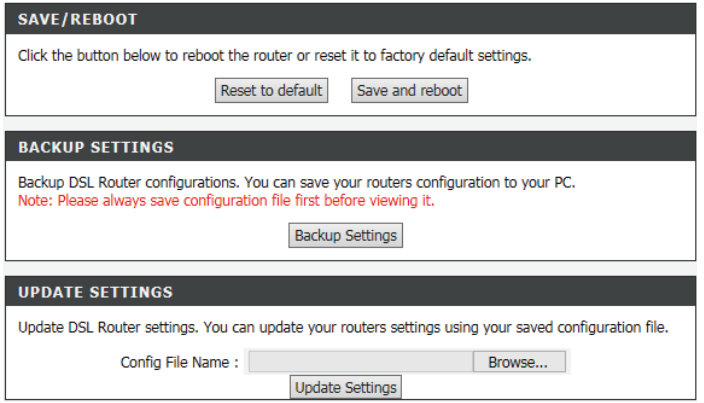
Maintenance



The Maintenance tab provides access to the DSL-124's administration and diagnostic tools.

System

This page allows you to reboot the device, back up your settings, or restore settings either from a file or to their default values.



SAVE/REBOOT

Reset to default: Click this button to restore all configuration settings back to the settings that were in effect at the time the device was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created.

Warning: Do not turn off your device or press the Reset button while an operation on this page is in progress.

Save and Reboot: Click this button to reboot the device.

BACKUP SETTINGS

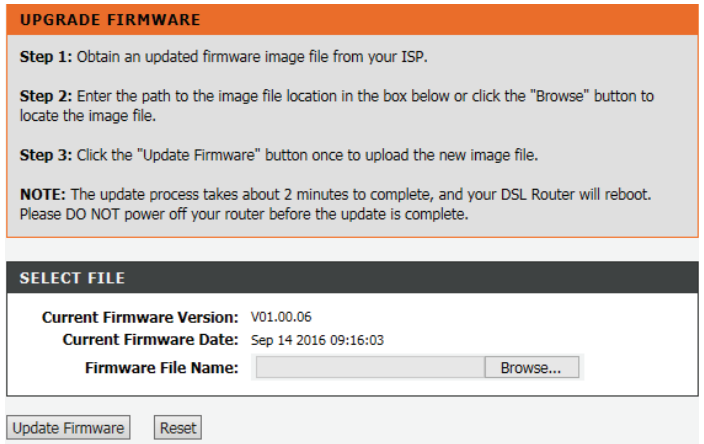
Backup Settings: Click this button to save the current router configuration settings to a file on the hard disk of the computer you are using. You will see a file dialog, where you can select a location and file name for the settings.

UPDATE SETTINGS

Update Settings: To restore a saved configuration, use the **Browse**... button to find the previously saved configuration file. Then, click the **Update Settings** button to transfer those settings to the device.

Firmware Update

This page allows you to upgrade the firmware of your router. Make sure the firmware you want to use is on the local hard drive of the computer and then click **Browse** to upload the file.



FIRMWARE UPDATE

Current Firmware Version: Displays your current firmware's version.

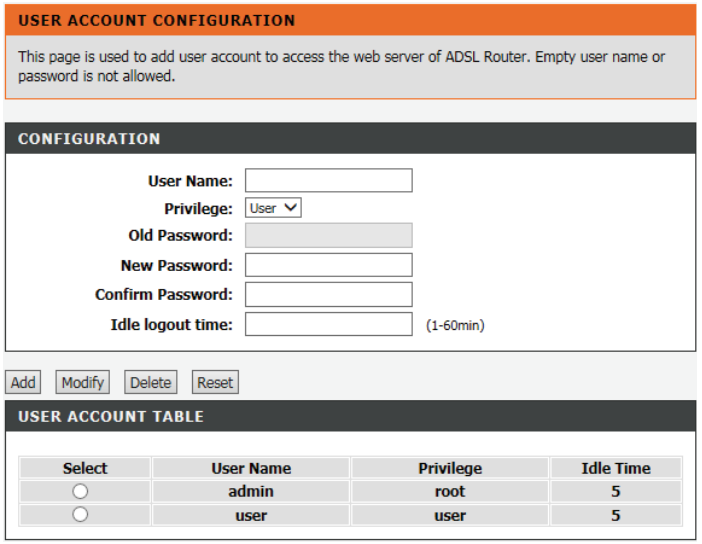
Current Firmware Date: Displays your current firmware's release date.

Firmware File Name: After you have downloaded a new firmware, click **Browse**... and locate the firmware on your computer. To begin the firmware update process, click **Update Firmware**. The update process takes about two minutes to complete.

Warning: You must use a computer with a wired connection to the device to upload the firmware file; do not use a wireless client. During the upgrade process, do not power off your computer or router, and do not refresh the browser window until the upgrade is complete.

Password

This section allows you to configure access to the router. You may configure different user names, passwords, privileges, and the idle time before automatic log out. If you forget your password, you will need to reset the device to the factory default settings and all device configuration settings will be lost.



CONFIGURATION

User Name: Enter the User Name

Privilege: Select either **Root** or **User** privilege.

Old Password: Enter the current password (existing users only).

New Password: Enter the new password.

Confirm Password: Re-enter the new password.

Idle logout time: Set a period of time to automatically log the user out if the session is inactive for the specified amount of time.

Click **Apply Changes** when you are done. Select **Add** to create a new account. Select an existing account from the user account table and click **Modify** to modify an existing account or **Delete** to delete it. Click **Reset** to undo reset modifications made to the above fields.

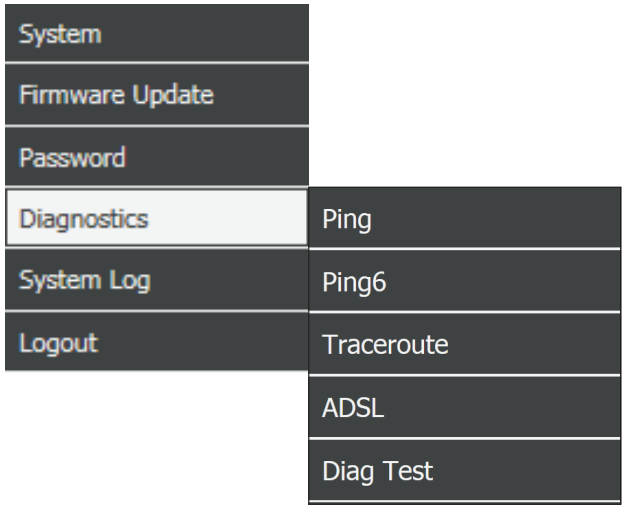
USERS ACCOUNT TABLE

The User Account Table displays information about the currently configured user accounts.

Diagnostics

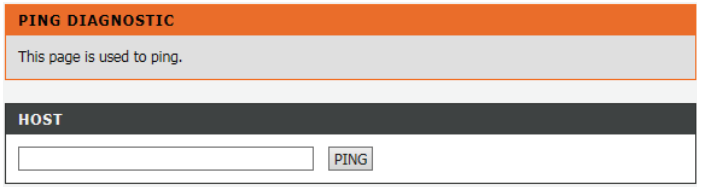
Hover your mouse over the **Diagnostics** option on the vertical menu bar running along the left side to access:

Ping
Ping6
Traceroute
ADSL
Diag Test



Ping

The Ping section enables you to run an IPv4 connectivity test.

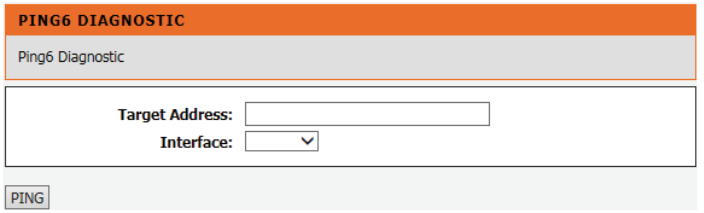


HOST

Enter an IPv4 address or hostname and click **Ping** and wait for the results to appear.

Ping6

The Ping6 section enables you to run an IPv6 connectivity test.



HOST

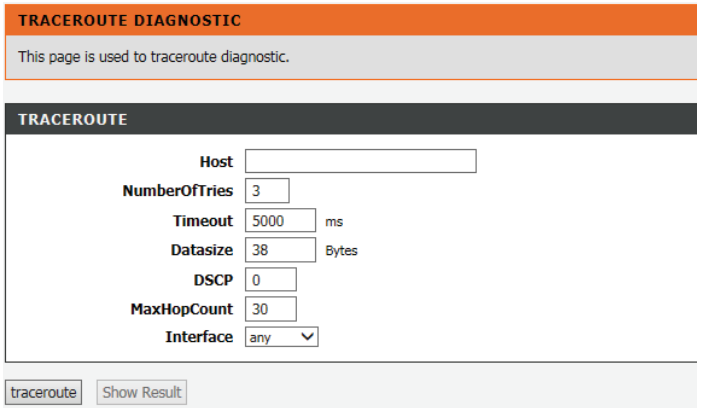
Target Address: Enter an IPv6 address.

Interface: Select the interface to run the ping6 test on.

Click **Ping** and wait for the results.

Traceroute

The Traceroute section enables you to run a traceroute test to see how your traffic transverses the Internet.



TRACEROUTE

Host: Enter an IP address or hostname.

NumberOfTries: Enter the number of attempts.

Timeout: Enter the timeout in ms.

Datasize: Enter the datasize in bytes.

DSCP: Adjust the DSCP number.

MaxHopCount: Enter the maximum number of hops.

Interface: Select the interface to initiate the traceroute.

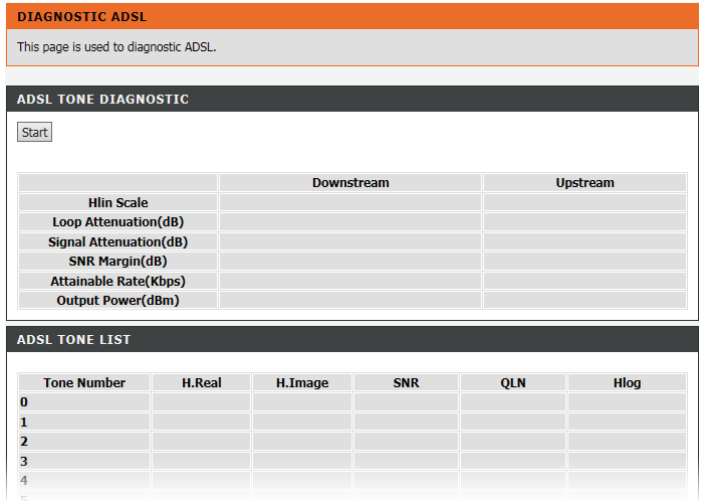
Click **Traceroute** to run the test and click **Show Result** to see the results.

ADSL

This page allows you to run a diagnostic test on your ADSL connection.

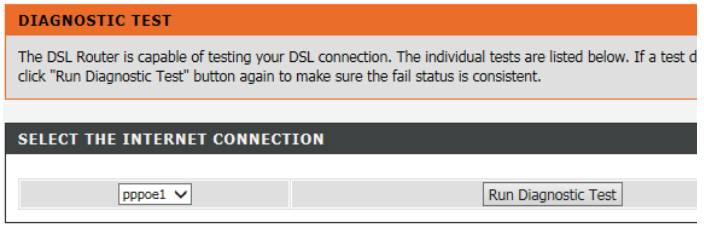
ADSL TONE DIAGNOSTIC

Click **Start** to begin the test.



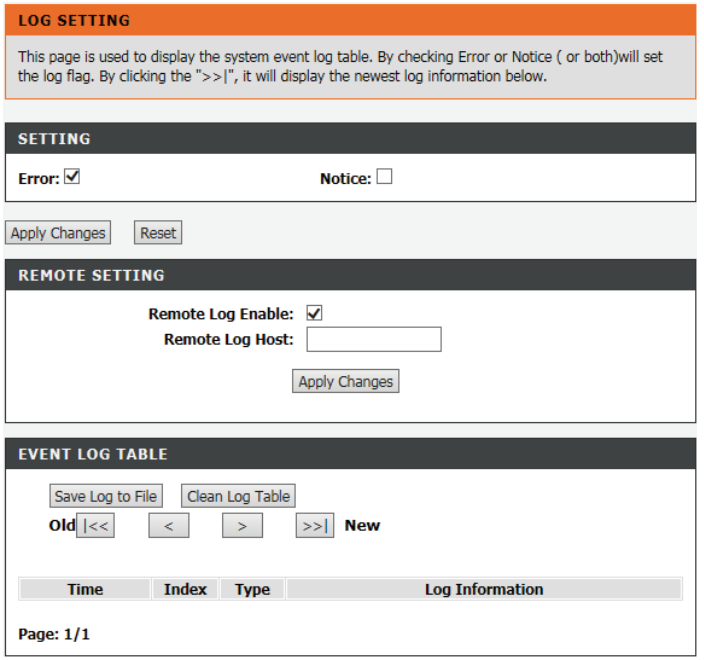
Diag Test

This page is used to test the connection to your local network, the connection to your DSL service provider, and the connection to your Internet service provider. Select your **Internet Connection** and click **Run Diagnostic Test** to run the diagnostics tests.



System Log

The DSL-124 keeps a running log of events and activities occurring on the router. You may send these logs to a SysLog server on your network.



SETTING

Error: Check this box to enable error messages.

Notice: Check this box to enable notice messages.

Click **Apply Changes** to have your changes take effect. Click **Reset** to undo your changes and revert to the previous settings.

REMOTE SETTING

Remote Setting: Check this box to enable remote logging.

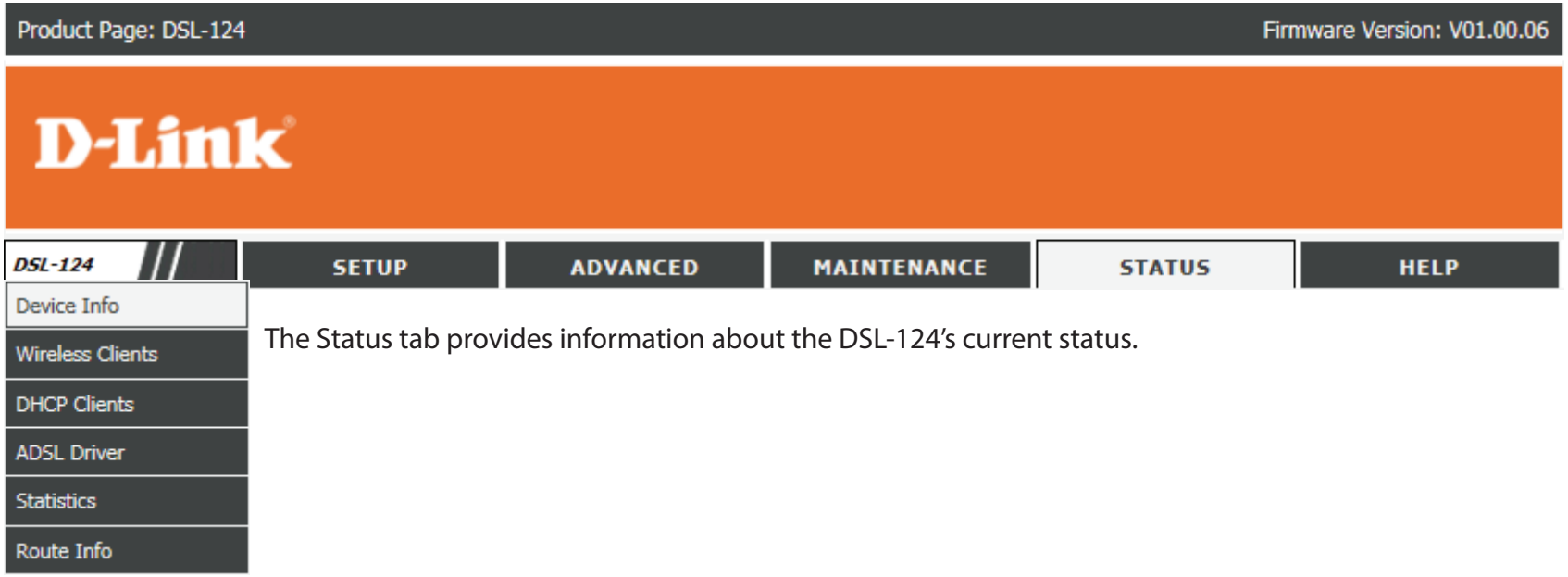
Remote Log Host: Enter the IP address of your logging server.

Click **Apply Changes** to have your changes take effect.

EVENT LOG TABLE

If you have logging enabled, you will see the current log of errors. Click **Save Log to File** to save the log to your computer's hard drive. Click **Clean Log Table** to clear the log.

Status



The Status tab provides information about the DSL-124's current status.

Device Info

This page displays the current information for the DSL-124.

SYSTEM

This section displays a summary of the system settings.

DSL

This section displays of the Internet connection settings.

LAN CONFIGURATION

This section displays a summary of the local network settings.

WIRELESS INFO

This section displays a summary of the wireless network settings.

DNS STATUS

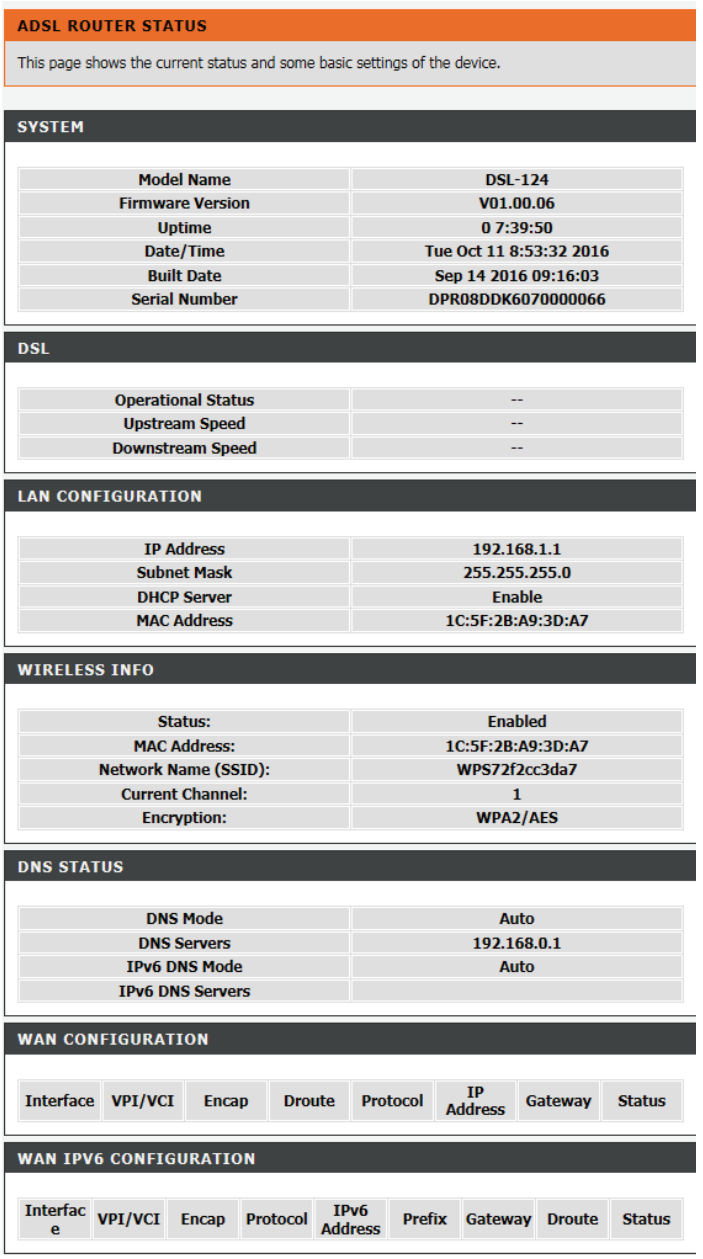
This section displays a summary of the DNS settings.

WAN CONFIGURATION

This section displays a summary of the WAN Configuration.

WAN IPV6 CONFIGURATION

This section displays a summary of the WAN IPv6 Configuration.



ADSL ROUTER STATUS

This page shows the current status and some basic settings of the device.

SYSTEM

Model Name	DSL-124
Firmware Version	V01.00.06
Uptime	0 7:39:50
Date/Time	Tue Oct 11 8:53:32 2016
Built Date	Sep 14 2016 09:16:03
Serial Number	DPR08DDK6070000066

DSL

Operational Status	--
Upstream Speed	--
Downstream Speed	--

LAN CONFIGURATION

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enable
MAC Address	1C:5F:2B:A9:3D:A7

WIRELESS INFO

Status:	Enabled
MAC Address:	1C:5F:2B:A9:3D:A7
Network Name (SSID):	WPS72f2cc3da7
Current Channel:	1
Encryption:	WPA2/AES

DNS STATUS

DNS Mode	Auto
DNS Servers	192.168.0.1
IPv6 DNS Mode	Auto
IPv6 DNS Servers	

WAN CONFIGURATION

Interface	VPI/VCI	Encap	Droute	Protocol	IP Address	Gateway	Status

WAN IPV6 CONFIGURATION

Interface	VPI/VCI	Encap	Protocol	IPv6 Address	Prefix	Gateway	Droute	Status

Device Info (Continued)

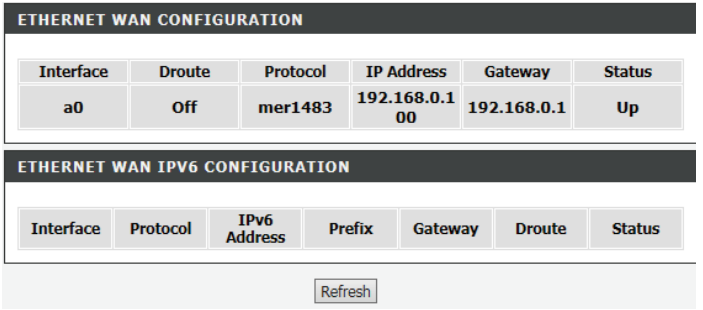
ETHERNET WAN CONFIGURATION

This section displays a summary of the Ethernet WAN Configuration.

ETHERNET WAN IPV6 CONFIGURATION

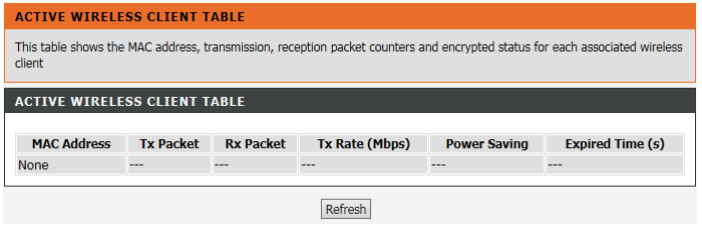
This section displays a summary of the Ethernet WAN IPv6 Configuration.

Click **Refresh** to refresh the list.



Wireless Clients

This table displays a list of wireless clients that are connected to your wireless router. It displays the MAC address, number of packets transmitted, number of packets received, the transmission speed, power saving status, and expiration time.

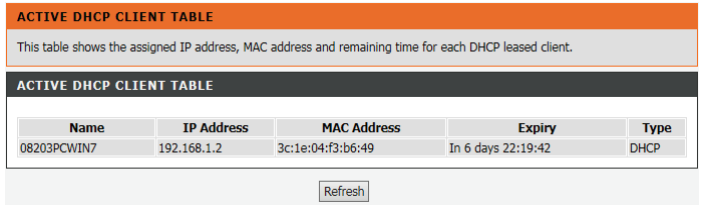


Click **Refresh** to refresh the list.

DHCP Clients

This table lists each DHCP client, including its hostname, MAC address, IP address, and expiration time.

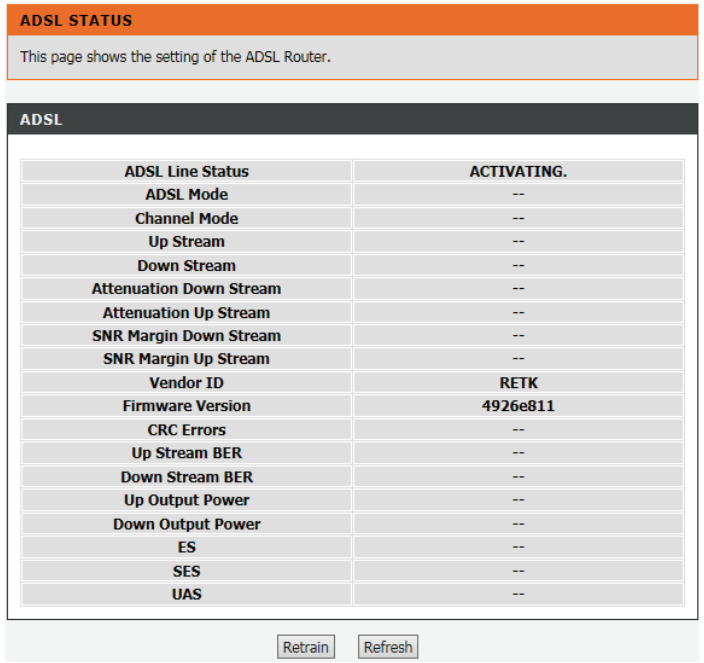
Click **Refresh** to refresh the list.



ADSL Driver

This page displays the current DSL status of your DSL-124.

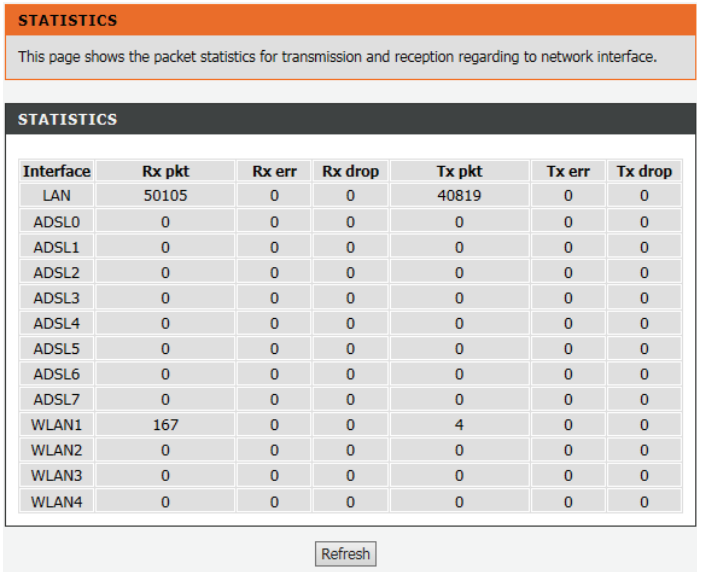
Click **Retrain** to force your DSL-124 to disconnect and re-connect to your IP. Click **Refresh** to refresh the page.



Statistics

Here you can view the packets transmitted and received passing through your router on both WAN and LAN ports, as well as the DSL information. The traffic counter will reset if the device is rebooted.

Click **Refresh** to refresh the list.



STATISTICS

This page shows the packet statistics for transmission and reception regarding to network interface.

STATISTICS

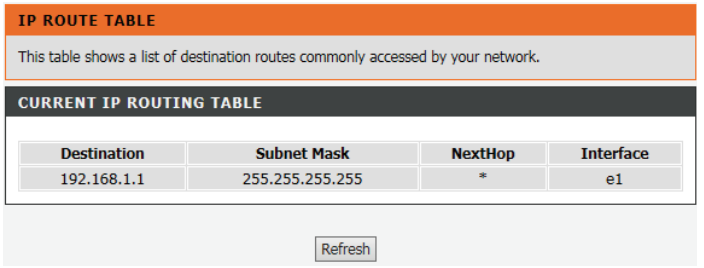
Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
LAN	50105	0	0	40819	0	0
ADSL0	0	0	0	0	0	0
ADSL1	0	0	0	0	0	0
ADSL2	0	0	0	0	0	0
ADSL3	0	0	0	0	0	0
ADSL4	0	0	0	0	0	0
ADSL5	0	0	0	0	0	0
ADSL6	0	0	0	0	0	0
ADSL7	0	0	0	0	0	0
WLAN1	167	0	0	4	0	0
WLAN2	0	0	0	0	0	0
WLAN3	0	0	0	0	0	0
WLAN4	0	0	0	0	0	0

Refresh

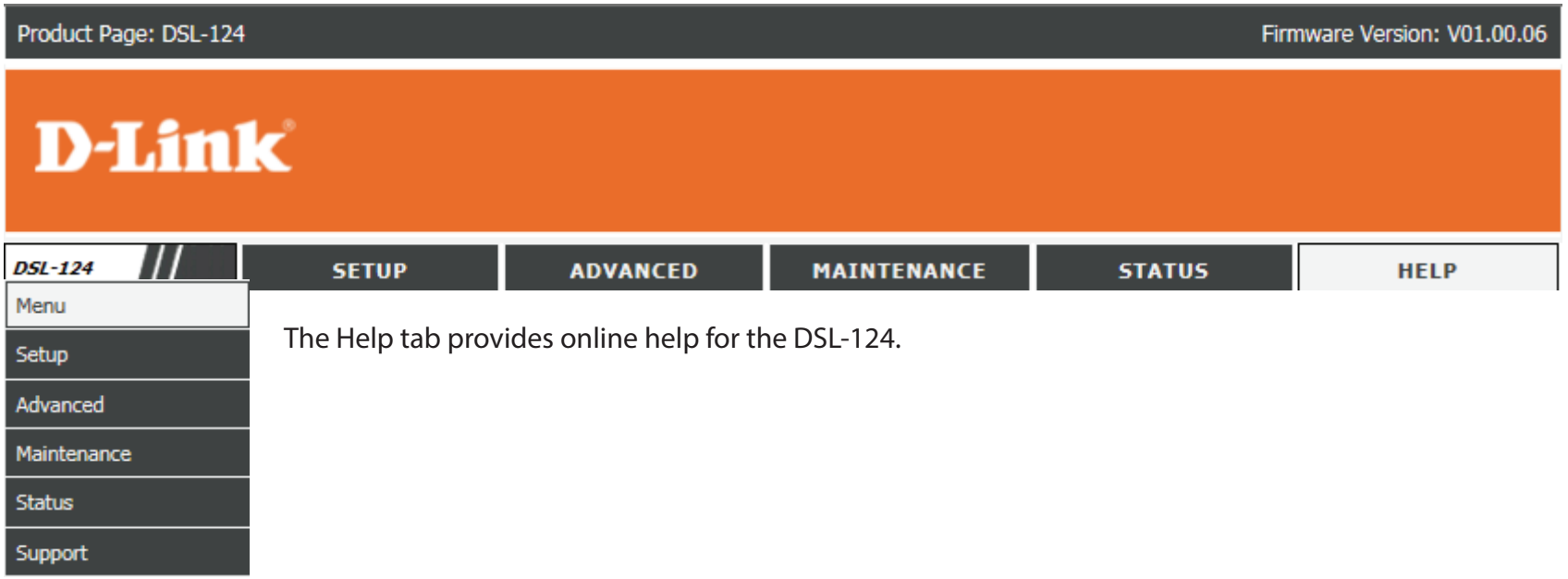
Route Info

The Route Info page displays a summary of the current route configuration between the router and the WAN.

Click **Refresh** to refresh the list.



Help


Product Page: DSL-124
Firmware Version: V01.00.06
D-Link
DSL-124
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
Menu
Setup
Advanced
Maintenance
Status
Support
The Help tab provides online help for the DSL-124.

Connect a Wireless Client to your Router

WPS Button

The easiest and most secure way to connect your wireless devices to the router is WPS (Wi-Fi Protected Setup). Most wireless devices such as wireless adapters, media players, Blu-ray DVD players, wireless printers and cameras will have a WPS button (or a software utility with WPS) that you can press to connect to the DSL-124 router. Please refer to your user manual for the wireless device you want to connect to make sure you understand how to enable WPS. Once you know, follow the steps below:

Step 1 - Press the WPS button on the back of DSL-124 for about 1 second. The Internet LED on the front will start to blink.

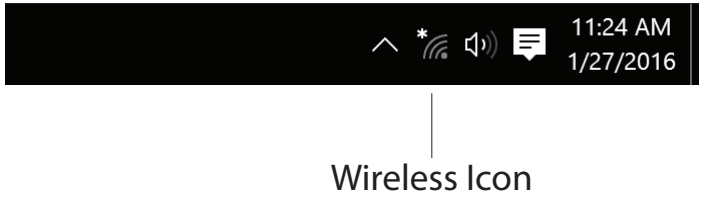
Step 2 - Within 2 minutes, press the WPS button on your wireless client (or launch the software utility and start the WPS process).

Step 3 - Allow up to 1 minute to configure. Once the Internet light stops blinking, you will be connected and your wireless connection will be secure with WPA2.

Windows® 10

When connecting to the DSL-124 wirelessly for the first time, you will need to input the wireless network name (SSID) and Wi-Fi password (security key) of the device you are connecting to. If your product has a Wi-Fi configuration card, you can find the default network name and Wi-Fi password here. Otherwise refer to the product label for the default Wi-Fi network SSID and password, or enter the Wi-Fi credentials set during the product configuration.

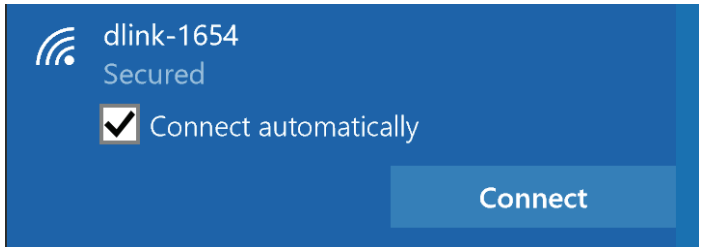
To join an existing network, locate the wireless network icon in the taskbar, next to the time display, and click on it.



Clicking on this icon will display a list of wireless networks which are within range of your computer. Select the desired network by clicking on the SSID.

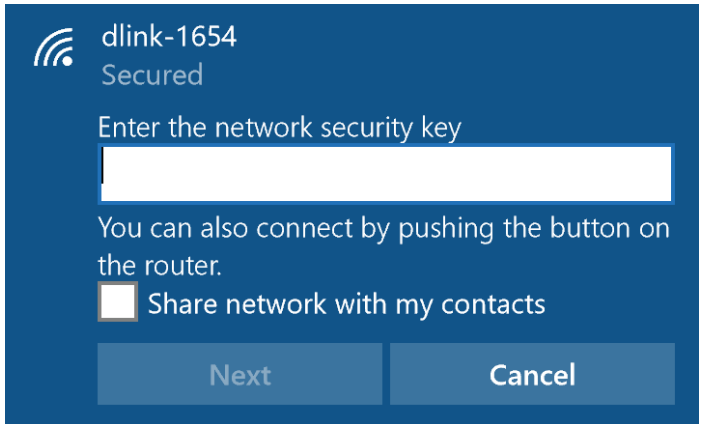
To connect to the SSID, click **Connect.**

To automatically connect to the router when your device detects the SSID, click the **Connect Automatically** check box**.**



You will then be prompted to enter the Wi-Fi password (network security key) for the wireless network. Enter the password into the box and click **Next** to connect to the network. Your computer will now automatically connect to this wireless network when it is detected.

You can also use Wi-Fi Protected Setup (WPS) to connect to the router. Press the WPS button on your D-Link device and you will be automatically connected.

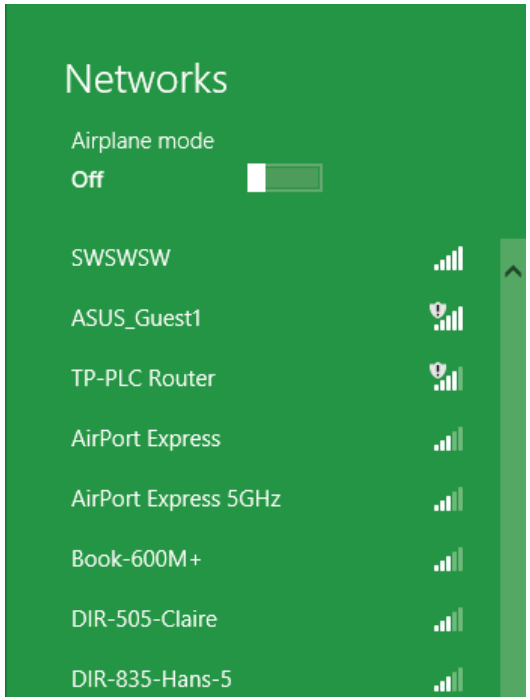


Windows® 8
WPA/WPA2

It is recommended that you 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 (Wi-Fi password) being used.

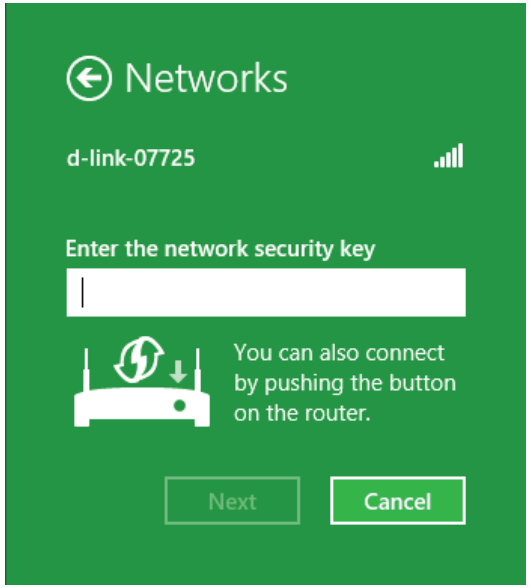
To join an existing network, locate the wireless network icon in the taskbar next to the time display.

Clicking on this icon will display a list of wireless networks that are within connecting proximity of your computer. Select the desired network by clicking on the network name.

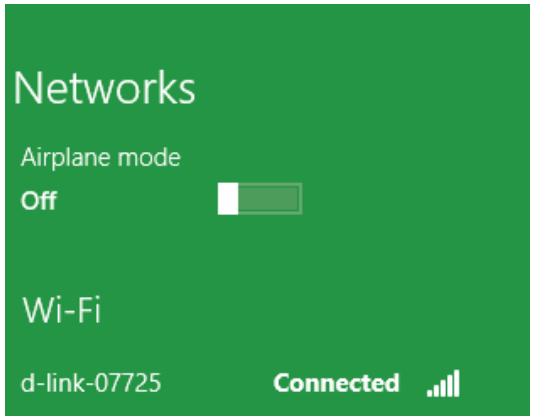


You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Next**.

If you wish to use Wi-Fi Protected Setup (WPS) to connect to the router, you can also press the WPS button on your router during this step to enable the WPS function.



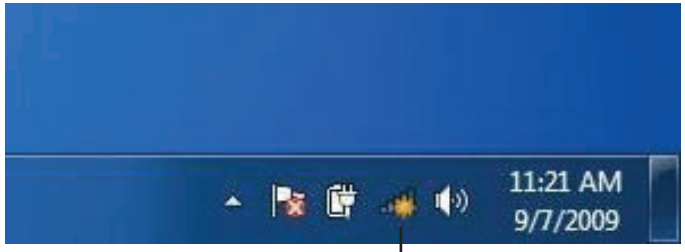
When you have established a successful connection to a wireless network, the word **Connected** will appear next to the name of the network to which you are connected to.



Windows® 7
WPA/WPA2

It is recommended that you 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.

Click on the wireless icon in your system tray (lower-right corner).



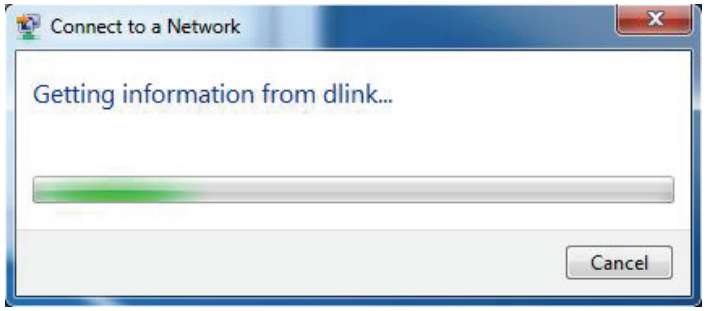
Wireless Icon

The utility will display any available wireless networks in your area.

Highlight the wireless connection with Wi-Fi name (SSID) you would like to connect to and click the **Connect** button.

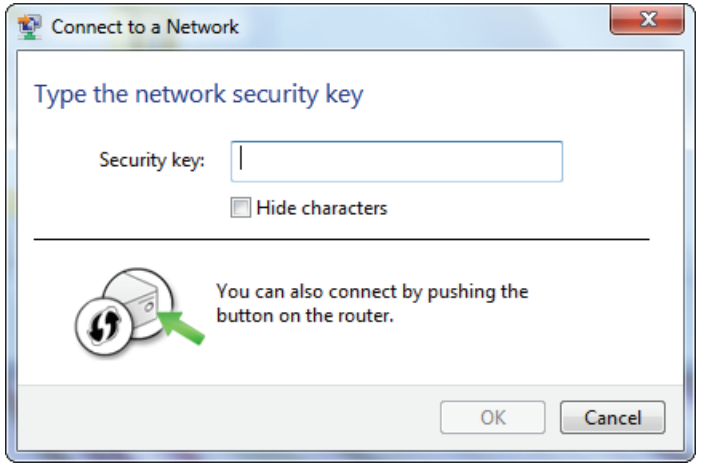
If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the Networking Basics section in this manual for more information.

The following window appears while your computer tries to connect to the router.



Enter the same security key or passphrase (Wi-Fi password) that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

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 the one on the wireless router.



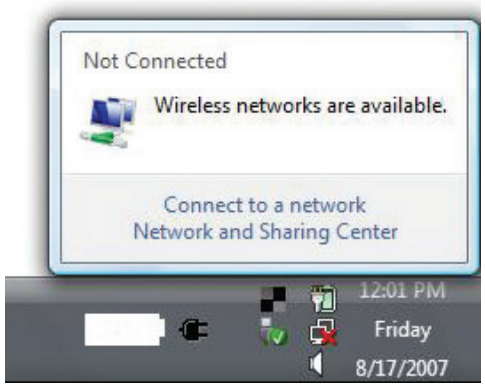
Windows Vista®

Windows Vista® users may use the built-in wireless utility. If you are using another company's wireless utility, please refer to the user manual of your wireless adapter for help connecting to a wireless network. Most wireless 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.

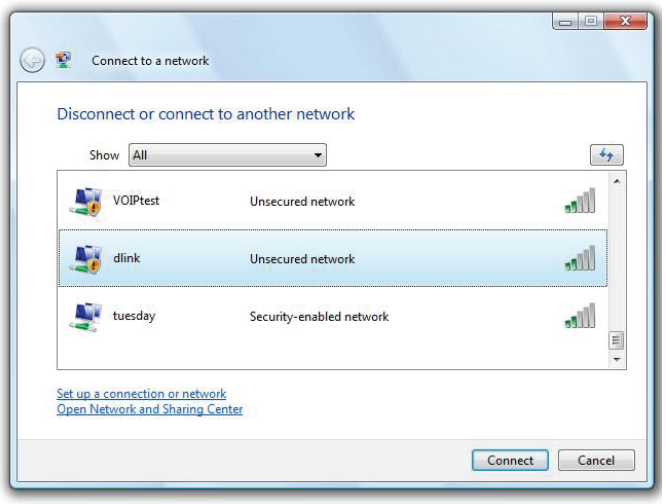
or

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.

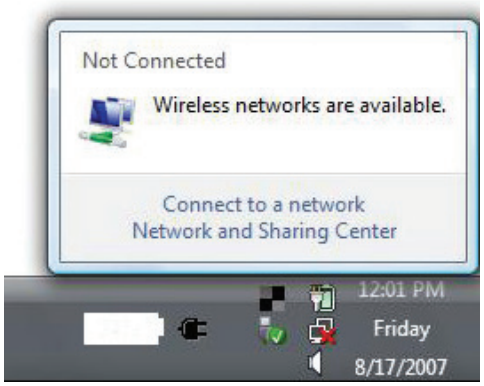
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



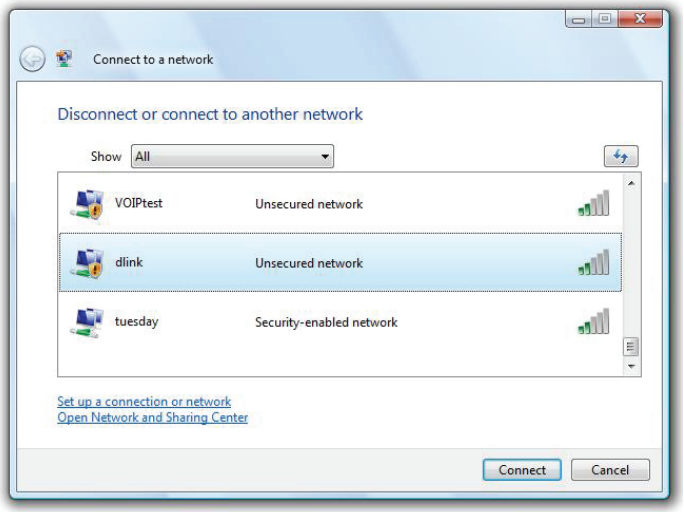
WPA/WPA2

It is recommended that you 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.

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**.



Highlight the Wi-Fi name (SSID) you would like to connect to and click **Connect**.



Enter the same security key or passphrase (Wi-Fi password) 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 the one on the wireless router.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-890L. 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 these examples.

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, nor do you 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:

- Microsoft Internet Explorer® 10 or higher
- Mozilla Firefox 28 or higher
- Google™ Chrome 28 or higher
- Apple Safari 6 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 ZoneAlarm, BlackICE, 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 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.

What can I do if I forgot my password?

If you forgot your password, you must reset your router. 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, leave the password box empty.

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).

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, XP, Vista®, and 7 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, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

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

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

• Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.

• Enter your username (admin) and password (sometimes 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 on 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 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 similarly to how cordless phones work, through radio signals that 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 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, university 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. This 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 as 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 Uses/Benefits

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

Small Office and Home Office Uses/Benefits

- 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 USB adapter with your laptop, you can access the hotspot to connect to the 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 the 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 DIR-890L wireless network USB 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 USB adapters. All the adapters must be in Ad-hoc mode to communicate.

Networking Basics

Check your IP address

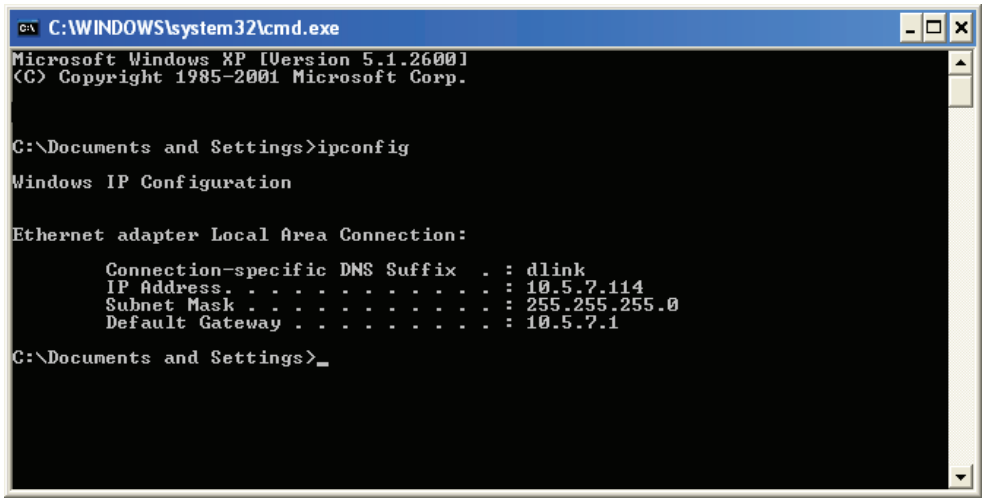
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK.** (Windows® 7/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.



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® 7 - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center**.
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**.

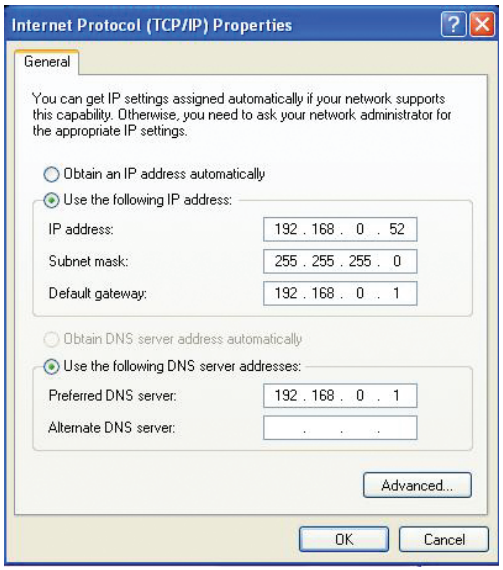
Step 2
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties**.

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 the Default Gateway the same as the LAN IP address of your router (I.E. 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.

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-890L offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

What is WPA?

WPA (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.

Technical Specifications

Hardware Specifications
- RJ-11 ADSL port
- 4 RJ-45 10/100BASE-TX Ethernet ports with auto MDI/MDIX
- Wireless Interface (2.4 GHz): IEEE 802.11n/g/b

Operating Voltage
- Input: 100~240 V AC (±20%), 50/60 Hz
- Output: 12 V DC, .5 A

Temperature
- Operating: 0 to 40 °C (32 to 104 °F)
- Non-Operating: -20 to 65 °C (-4 to 149 °F)

Humidity
- Operating: 0% - 90% non-condensing
- Non-Operating: 5% - 95% non-condensing

ADSL Standards
- Multi-mode
- Full-rate ANSI T1.413 Issue 2
- ITU-T G.992.1 (G.dmt) Annex A/C/I
- ITU-T G.992.2 (G.lite) Annex A/C
- ITU-T G.994.1 (G.hs)

ADSL2 Standards
- ITU-T G.992.3 (G.dmt.bis) Annex A/J/K/L/M
- ITU-T G.992.4 (G.lite.bis) Annex A

ADSL2+ Standards
- ITU-T G.992.5 Annex A/L/M

Wireless Bandwidth Rate
- IEEE 802.11b: 11, 5.5, 2, and 1 Mbps
- IEEE 802.11g: 54, 48, 36, 24, 18, 12, 9, and 6 Mbps
- IEEE 802.11n: 6.5 to 150 Mbps
  20 MHz: 150, 130, 117, 104, 78, 52, 39, 26, 13 Mbps
  40 MHz: 300, 270, 240, 180, 120, 90, 60, 30 Mbps

Antenna Type
- Dual 2x2 built-in MIMO antennas

Wireless Security
- 64/128-bit WEP, WPA/WPA2-Personal
- WPA/WPA2-Enterprise
- WPS (PIN & PBC)

Certifications
- CE
- FCC
- LVD

Dimensions & Weight
- 160 x 115 x 30 mm (6.30 x 4.53 x 1.18 inches)
- 145 grams (5.11 ounces)

Regulatory Statements

CE

	Frequency Band(s) **Frequenzband** **Fréquence bande(s)** **Bandas de Frecuencia** **Frequenza/e** **Frequentie(s)**	**Max. Output Power (EIRP)** **Max. Output Power** **Consommation d'énergie max.** **Potencia máxima de Salida** **Potenza max. Output** **Max. Output Power**
5 G	5.15 – 5.25 GHz	200 mW
	5.25 – 5.35 GHz	200 mW
	5.47 – 5.725 GHz	1 W
2.4 G	2.4 – 2.4835 GHz	100 mW

European Community Declaration of Conformity:

Česky [Czech]	Tímto D-Link Corporation prohlašuje, že tento produkt, jeho příslušenství a software jsou v souladu se směrnicí 2014/53/EU. Celý text ES prohlášení o shodě vydaného EU a o firmwaru produktu lze stáhnout na stránkách k produktu www.dlink.com.
Dansk [Danish]	D-Link Corporation erklærer herved, at dette produkt, tilbehør og software er i overensstemmelse med direktiv 2014/53/EU. Den fulde tekst i EU-overensstemmelseserklæringen og produktfirmware kan wnloades fra produktsiden hos www.dlink.com.
Deutsch [German]	Hiermit erklärt die D-Link Corporation, dass dieses Produkt, das Zubehör und die Software der Richtlinie 2014/53/EU entsprechen. Der vollständige Text der Konformitätserklärung der Europäischen Gemeinschaft sowie die Firmware zum Produkt stehen Ihnen zum Herunterladen von der Produktseite im Internet auf www.dlink.com zur Verfügung.
Eesti [Estonian]	Käesolevaga kinnitab D-Link Corporation, et see toode, tarvikud ja tarkvara on kooskõlas direktiiviga 2014/53/EL. Euroopa Liidu vastavusdeklaratsiooni täistekst ja toote püsivara on allalaadimiseks saadaval tootelehel www.dlink.com.
English	Hereby, D-Link Corporation, declares that this product, accessories, and software are in compliance with directive 2014/53/EU. The full text of the EU Declaration of Conformity and product firmware are available for download from the product page at www.dlink.com
Español [Spanish]	Por la presente, D-Link Corporation declara que este producto, accesorios y software cumplen con las directivas 2014/53/UE. El texto completo de la declaración de conformidad de la UE y el firmware del producto están disponibles y se pueden descargar desde la página del producto en www.dlink.com.
Ελληνική [Greek]	Με την παρούσα, η D-Link Corporation δηλώνει ότι αυτό το προϊόν, τα αξεσουάρ και το λογισμικό συμμορφώνονται με την Οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης της ΕΕ και το υλικολογισμικό του προϊόντος είναι διαθέσιμα για λήψη από τη σελίδα του προϊόντος στην τοποθεσία www.dlink.com.
Français [French]	Par les présentes, D-Link Corporation déclare que ce produit, ces accessoires et ce logiciel sont conformes aux directives 2014/53/UE.Le texte complet de la déclaration de conformité de l'UE et le icroprogramme du produit sont disponibles au téléchargement sur la page des produits à www.dlink.com.
Italiano [Italian]	Con la presente, D-Link Corporation dichiara che questo prodotto, i relativi accessori e il software sono conformi alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE e il firmware del prodotto sono disponibili per il download dalla pagina del prodotto su www.dlink.com.

Latviski [Latvian]	Ar šo uzņēmums D-Link Corporation apliecina, ka šis produkts, piederumi un programmatūra atbilst direktīvai 2014/53/ES. ES atbilstības deklarācijas pilno tekstu un produkta aparātprogrammatūru var lejupielādēt attiecīgā produkta lapā vietnē www.dlink.com.
Lietuvių [Lithuanian]	Šiuo dokumentu „D-Link Corporation“ pareiškia, kad šis gaminys, priedai ir programinė įranga atitinka direktyvą 2014/53/ES. Visą ES atitikties deklaracijos tekstą ir gaminio programinę aparatinę įrangą galima atsisiųsti iš gaminio puslapio adresu www.dlink.com.
Nederlands [Dutch]	Hierbij verklaart D-Link Corporation dat dit product, accessoires en software voldoen aan de richtlijnen 2014/53/EU. De volledige tekst van de EU conformiteitsverklaring en productfirmware is beschikbaar voor download van de productpagina op www.dlink.com.
Malti [Maltese]	Bil-preżenti, D-Link Corporation tiddikjara li dan il-prodott, l-aċċessorji, u s-software huma konformi mad-Direttiva 2014/53/UE. Tista' tniżżel it-test sħiħ tad-dikjarazzjoni ta' konformità tal-UE u l-firmware tal-prodott mill-paġna tal-prodott fuq www.dlink.com.
Magyar [Hungarian]	Ezennel a D-Link Corporation kijelenti, hogy a jelen termék, annak tartozékai és szoftvere megfelelnek a 2014/53/EU sz. rendeletek rendelkezéseinek. Az EU Megfelelőségi nyilatkozat teljes szövege és a termék firmware a termék oldaláról tölthető le a www.dlink.com címen.
Polski [Polish]	D-Link Corporation niniejszym oświadcza, że ten produkt, akcesoria oraz oprogramowanie są zgodne z dyrektywami 2014/53/EU. Pełen tekst deklaracji zgodności UE oraz oprogramowanie sprzętowe do produktu można pobrać na stronie produktu w witrynie www.dlink.com.
Português [Portuguese]	Desta forma, a D-Link Corporation declara que este produto, os acessórios e o software estão em conformidade com a diretiva 2014/53/UE. O texto completo da declaração de conformidade da UE e do firmware
Slovensko[Slovenian]	Podjetje D-Link Corporation s tem izjavlja, da so ta izdelek, dodatna oprema in programska oprema skladni z direktivami 2014/53/EU. Celotno besedilo izjave o skladnosti EU in vdelana programska oprema sta na voljo za prenos na strani izdelka na www.dlink.com.
Slovensky [Slovak]	Spoločnosť D-Link týmto vyhlasuje, že tento produkt, príslušenstvo a softvér sú v súlade so smernicou 214/53/EÚ. Úplné znenie vyhlásenia EÚ o zhode a firmvéri produktu sú k dispozícii na prevzatie zo stránky produktu www.dlink.com.
Suomi [Finnish]	D-Link Corporation täten vakuuttaa, että tämä tuote, lisävarusteet ja ohjelmisto ovat direktiivin 2014/53/EU vaatimusten mukaisia. Täydellinen EU-vaatimustenmukaisuusvakuutus samoin kuin tuotteen laiteohjelmisto ovat ladattavissa osoitteesta www.dlink.com.

Svenska[Swedish]	D-Link Corporation försäkrar härmed att denna produkt, tillbehör och programvara överensstämmer med direktiv 2014/53/EU. Hela texten med EU-försäkran om överensstämmelse och produkt-firmware kan hämtas från produktsidan på www.dlink.com.
Íslenska [Icelandic]	Hér með lýsir D-Link Corporation því yfir að þessi vara, fylgihlutir og hugbúnaður eru í samræmi við tilskipun 2014/53/EB. Sækja má ESB-samræmisyfirlýsinguna í heild sinni og fastbúnað vörunnar af vefsíðu vörunnar á www.dlink.com.
Norsk [Norwegian]	Herved erklærer D-Link Corporation at dette produktet, tilbehøret og programvaren er i samsvar med direktivet 2014/53/EU. Den fullstendige teksten i EU-erklæring om samsvar og produktets fastvare er tilgjengelig for nedlasting fra produktsiden på www.dlink.com.

Warning Statement:

The power outlet should be near the device and easily accessible.

NOTICE OF WIRELESS RADIO LAN USAGE IN THE EUROPEAN COMMUNITY (FOR WIRELESS PRODUCT ONLY):

- This device is restricted to indoor use when operated in the European Community using channels in the 5.15-5.35 GHz band to reduce the potential for interference.
- This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries. This equipment may be operated in AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, and CY.

Usage Notes:

- To remain in conformance with European National spectrum usage regulations, frequency and channel limitations will be applied on the products according to the country where the equipment will be deployed.
- This device is restricted from functioning in Ad-hoc mode while operating in 5 GHz. Ad-hoc mode is direct peer-to-peer communication between two client devices without an Access Point.
- Access points will support DFS (Dynamic Frequency Selection) and TPC (Transmit Power Control) functionality as required when operating in 5 GHz band within the EU.
- Please refer to the product manual or datasheet to check whether your product uses 2.4 GHz and/or 5 GHz wireless.

HINWEIS ZUR VERWENDUNG VON DRAHTLOS-NETZWERK (WLAN) IN DER EUROPÄISCHEN GEMEINSCHAFT (NUR FÜR EIN DRAHTLOSES PRODUKT)

- Der Betrieb dieses Geräts in der Europäischen Gemeinschaft bei Nutzung von Kanälen im 5,15-5,35 GHz Frequenzband ist ausschließlich auf Innenräume beschränkt, um das Interferenzpotential zu reduzieren.
- Bei diesem Gerät handelt es sich um ein zum Einsatz in allen EU-Mitgliedsstaaten und in EFTA-Ländern - ausgenommen Frankreich. Der Betrieb dieses Geräts ist in den folgenden Ländern erlaubt: AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Gebrauchshinweise:

- Um den in Europa geltenden nationalen Vorschriften zum Nutzen des Funkspektrums weiterhin zu entsprechen, werden Frequenz und Kanalbeschränkungen, dem jeweiligen Land, in dem das Gerät zum Einsatz kommt, entsprechend, auf die Produkte angewandt.
- Die Funktionalität im Ad-hoc-Modus bei Betrieb auf 5 GHz ist für dieses Gerät eingeschränkt. Bei dem Ad-hoc-Modus handelt es sich um eine Peer-to-Peer-Kommunikation zwischen zwei Client-Geräten ohneeinen Access Point.
- Access Points unterstützen die Funktionen DFS (Dynamic Frequency Selection) und TPC (Transmit Power Control) wie erforderlich bei Betrieb auf 5 GHz innerhalb der EU.
- Bitte schlagen Sie im Handbuch oder Datenblatt nach nach, ob Ihr Gerät eine 2,4 GHz und / oder 5 GHz Verbindung nutzt.

AVIS CONCERNANT L'UTILISATION DE LA RADIO SANS FIL LAN DANS LA COMMUNAUTÉ EUROPÉENNE (UNIQUEMENT POUR LES PRODUITS SANS FIL)

- Cet appareil est limité à un usage intérieur lorsqu'il est utilisé dans la Communauté européenne sur les canaux de la bande de 5,15 à 5,35 GHz afin de réduire les risques d'interférences.
- Cet appareil est un système de transmission à large bande (émetteur-récepteur) de 2,4 GHz, destiné à être utilisé dans tous les États-membres de l'UE et les pays de l'AELE. Cet équipement peut être utilisé dans les pays suivants : AL, AD, BE , BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT , MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Notes d'utilisation:

- Pour rester en conformité avec la réglementation nationale européenne en matière d'utilisation du spectre, des limites de fréquence et de canal seront appliquées aux produits selon le pays où l'équipement sera déployé.
- Cet appareil ne peut pas utiliser le mode Ad-hoc lorsqu'il fonctionne dans la bande de 5 GHz. Le mode Adhoc fournit une communication directe pair à pair entre deux périphériques clients sans point d'accès.
- Les points d'accès prendront en charge les fonctionnalités DFS (Dynamic Frequency Selection) et TPC (Transmit Power Control) au besoin lors du fonctionnement dans la bande de 5 GHz au sein de l'UE.
- Merci de vous référer au guide d'utilisation ou de la fiche technique afin de vérifier si votre produit utilise 2.4 GHz et/ou 5 GHz sans fil.

AVISO DE USO DE LA LAN DE RADIO INALÁMBRICA EN LA COMUNIDAD EUROPEA (SOLO PARA EL PRODUCTO INALÁMBRICO)

- El uso de este dispositivo está restringido a interiores cuando funciona en la Comunidad Europea utilizando canales en la banda de 5,15-5,35 GHz, para reducir la posibilidad de interferencias.
- Este dispositivo es un sistema de transmisión (transceptor) de banda ancha de 2,4 GHz, pensado para su uso en todos los estados miembros de la UE y en los países de la AELC. Este equipo se puede utilizar en AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Notas de uso:

- Para seguir cumpliendo las normas europeas de uso del espectro nacional, se aplicarán limitaciones de frecuencia y canal en los productos en función del país en el que se pondrá en funcionamiento el equipo.
- Este dispositivo tiene restringido el funcionamiento en modo Ad-hoc mientras funcione a 5 Ghz. El modo Ad-hoc es la comunicación directa de igual a igual entre dos dispositivos cliente sin un punto de acceso.
- Los puntos de acceso admitirán la funcionalidad DFS (Selección de frecuencia dinámica) y TPC (Control de la potencia de transmisión) si es necesario cuando funcionan a 5 Ghz dentro de la UE.
- Por favor compruebe el manual o la ficha de producto para comprobar si el producto utiliza las bandas inalámbricas de 2.4 GHz y/o la de 5 GHz.

AVVISO PER L'USO DI LAN RADIO WIRELESS NELLA COMUNITÀ EUROPEA (SOLO PER PRODOTTI WIRELESS)

- Nella Comunità europea, l'uso di questo dispositivo è limitato esclusivamente agli ambienti interni sui canali compresi nella banda da 5,15 a 5,35 GHz al fine di ridurre potenziali interferenze. Questo dispositivo è un sistema di trasmissione a banda larga a 2,4 GHz (ricetrasmittente), destinato all'uso in tutti gli stati membri dell'Unione europea e nei paesi EFTA.
- Questo dispositivo può essere utilizzato in AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Note per l'uso

- Al fine di mantenere la conformità alle normative nazionali europee per l'uso dello spettro di frequenze, saranno applicate limitazioni sulle frequenze e sui canali per il prodotto in conformità alle normative del paese in cui il dispositivo viene utilizzato.
- Questo dispositivo non può essere attivato in modalità Ad-hoc durante il funzionamento a 5 Ghz. La modalità Ad-hoc è una comunicazione diretta peer-to-peer fra due dispositivi client senza un punto di accesso.
- I punti di accesso supportano le funzionalità DFS (Dynamic Frequency Selection) e TPC (Transmit Power Control) richieste per operare a 5 Ghz nell'Unione europea.
- Ti invitiamo a fare riferimento al manuale del prodotto o alla scheda tecnica per verificare se il tuo prodotto utilizza le frequenze 2,4 GHz e/o 5 GHz.

KENNISGEVING VAN DRAADLOOS RADIO LAN-GEBRUIK IN DE EUROPESE GEMEENSCHAP (ALLEEN VOOR DRAADLOOS PRODUCT)

- Dit toestel is beperkt tot gebruik binnenshuis wanneer het wordt gebruikt in de Europese Gemeenschap gebruik makend van kanalen in de 5.15-5.35 GHz band om de kans op interferentie te beperken.
- Dit toestel is een 2.4 GHz breedband transmissiesysteem (transceiver) dat bedoeld is voor gebruik in alle EU lidstaten en EFTA landen. Deze uitrusting mag gebruikt worden in AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, PL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Gebruiksaanwijzingen:

- Om de gebruiksvoorschriften van het Europese Nationale spectrum na te leven, zullen frequentie- en kanaalbeperkingen worden toegepast op de producten volgens het land waar de uitrusting gebruikt zal worden.
- Dit toestel kan niet functioneren in Ad-hoc mode wanneer het gebruikt wordt in 5 GHz. Ad-hoc mode is directe peer-to-peer communicatie tussen twee klantenapparaten zonder een toegangspunt.
- Toegangspunten ondersteunen DFS (Dynamic Frequency Selection) en TPC (Transmit Power Control) functionaliteit zoals vereist bij gebruik in 5 GHz binnen de EU.
- Raadpleeg de handleiding of de datasheet om te controleren of uw product gebruik maakt van 2.4 GHz en/of 5 GHz.

SAFETY INSTRUCTIONS

The following general safety guidelines are provided to help ensure your own personal safety and protect your product from potential damage. Remember to consult the product user instructions for more details.

- Static electricity can be harmful to electronic components. Discharge static electricity from your body (i.e. touching grounded bare metal) before touching the product.
- Do not attempt to service the product and never disassemble the product. For some products with a user replaceable battery, please read and follow the instructions in the user manual.
- Do not spill food or liquid on your product and never push any objects into the openings of your product.
- Do not use this product near water, areas with high humidity, or condensation unless the product is specifically rated for outdoor application.
- Keep the product away from radiators and other heat sources.
- Always unplug the product from mains power before cleaning and use a dry lint free cloth only.

SICHERHEITSVORSCHRIFTEN

Die folgenden allgemeinen Sicherheitsvorschriften dienen als Hilfe zur Gewährleistung Ihrer eigenen Sicherheit und zum Schutz Ihres Produkts. Weitere Details finden Sie in den Benutzeranleitungen zum Produkt.

- Statische Elektrizität kann elektronischen Komponenten schaden. Um Schäden durch statische Aufladung zu vermeiden, leiten Sie elektrostatische Ladungen von Ihrem Körper ab,
  (z. B. durch Berühren eines geerdeten blanken Metallteils), bevor Sie das Produkt berühren.
- Unterlassen Sie jeden Versuch, das Produkt zu warten, und versuchen Sie nicht, es in seine Bestandteile zu zerlegen. Für einige Produkte mit austauschbaren Akkus lesen Sie bitte das Benutzerhandbuch und befolgen Sie die dort beschriebenen Anleitungen.
- Vermeiden Sie, dass Speisen oder Flüssigkeiten auf Ihr Produkt gelangen, und stecken Sie keine Gegenstände in die Gehäuseschlitze oder -öffnungen Ihres Produkts.
- Verwenden Sie dieses Produkt nicht in unmittelbarer Nähe von Wasser und nicht in Bereichen mit hoher Luftfeuchtigkeit oder Kondensation, es sei denn, es ist speziell zur Nutzung in Außenbereichen vorgesehen und eingestuft.
- Halten Sie das Produkt von Heizkörpern und anderen Quellen fern, die Wärme erzeugen.
- Trennen Sie das Produkt immer von der Stromzufuhr, bevor Sie es reinigen und verwenden Sie dazu ausschließlich ein trockenes fusselfreies Tuch.

CONSIGNES DE SÉCURITÉ

Les consignes générales de sécurité ci-après sont fournies afin d'assurer votre sécurité personnelle et de protéger le produit d'éventuels dommages. Veuillez consulter les consignes d'utilisation du produit pour plus de détails.

- L'électricité statique peut endommager les composants électroniques. Déchargez l'électricité statique de votre corps (en touchant un objet en métal relié à la terre par exemple) avant de toucher le produit.
- N'essayez pas d'intervenir sur le produit et ne le démontez jamais. Pour certains produits contenant une batterie remplaçable par l'utilisateur, veuillez lire et suivre les consignes contenues dans le manuel d'utilisation.
- Ne renversez pas d'aliments ou de liquide sur le produit et n'insérez jamais d'objets dans les orifices.
- N'utilisez pas ce produit à proximité d'un point d'eau, de zones très humides ou de condensation sauf si le produit a été spécifiquement conçu pour une application extérieure.
- Éloignez le produit des radiateurs et autres sources de chaleur.
- Débranchez toujours le produit de l'alimentation avant de le nettoyer et utilisez uniquement un chiffon sec non pelucheux.

INSTRUCCIONES DE SEGURIDAD

Las siguientes directrices de seguridad general se facilitan para ayudarle a garantizar su propia seguridad personal y para proteger el producto frente a posibles daños. No olvide consultar las instrucciones del usuario del producto para obtener más información.

- La electricidad estática puede resultar nociva para los componentes electrónicos. Descargue la electricidad estática de su cuerpo (p. ej., tocando algún metal sin revestimiento conectado a tierra) antes de tocar el producto.
- No intente realizar el mantenimiento del producto ni lo desmonte nunca. Para algunos productos con batería reemplazable por el usuario, lea y siga las instrucciones del manual de usuario.
- No derrame comida o líquidos sobre el producto y nunca deje que caigan objetos en las aberturas del mismo.
- No utilice este producto cerca del agua, en zonas con humedad o condensación elevadas a menos que el producto esté clasificado específicamente para aplicación en exteriores.
- Mantenga el producto alejado de los radiadores y de otras fuentes de calor.
- Desenchufe siempre el producto de la alimentación de red antes de limpiarlo y utilice solo un paño seco sin pelusa.

ISTRUZIONI PER LA SICUREZZA

Le seguenti linee guida sulla sicurezza sono fornite per contribuire a garantire la sicurezza personale degli utenti e a proteggere il prodotto da potenziali danni. Per maggiori dettagli, consultare le istruzioni per l'utente del prodotto.

- L'elettricità statica può essere pericolosa per i componenti elettronici. Scaricare l'elettricità statica dal corpo (ad esempio toccando una parte metallica collegata a terra) prima di toccare il prodotto.
- Non cercare di riparare il prodotto e non smontarlo mai. Per alcuni prodotti dotati di batteria sostituibile dall'utente, leggere e seguire le istruzioni riportate nel manuale dell'utente.
- Non versare cibi o liquidi sul prodotto e non spingere mai alcun oggetto nelle aperture del prodotto.
- Non usare questo prodotto vicino all'acqua, in aree con elevato grado di umidità o soggette a condensa a meno che il prodotto non sia specificatamente approvato per uso in ambienti esterni.
- Tenere il prodotto lontano da caloriferi e altre fonti di calore.
- Scollegare sempre il prodotto dalla presa elettrica prima di pulirlo e usare solo un panno asciutto che non lasci filacce.

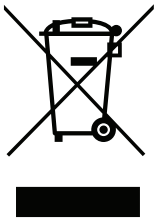
VEILIGHEIDSINFORMATIE

De volgende algemene veiligheidsinformatie werd verstrekt om uw eigen persoonlijke veiligheid te waarborgen en uw product te beschermen tegen mogelijke schade. Denk eraan om de gebruikersinstructies van het product te raadplegen voor meer informatie.

- Statische elektriciteit kan schadelijk zijn voor elektronische componenten. Ontlaad de statische elektriciteit van uw lichaam (d.w.z. het aanraken van geaard bloot metaal) voordat uhet product aanraakt.
- U mag nooit proberen het product te onderhouden en u mag het product nooit demonteren. Voor sommige producten met door de gebruiker te vervangen batterij, dient u de instructies in de gebruikershandleiding te lezen en te volgen.
- Mors geen voedsel of vloeistof op uw product en u mag nooit voorwerpen in de openingen van uw product duwen.
- Gebruik dit product niet in de buurt van water, gebieden met hoge vochtigheid of condensatie, tenzij het product specifiek geclassificeerd is voor gebruik buitenshuis.
- Houd het product uit de buurt van radiators en andere warmtebronnen.
- U dient het product steeds los te koppelen van de stroom voordat u het reinigt en gebruik uitsluitend een droge pluisvrije doek.

Disposing of and Recycling Your Product

ENGLISH **EN**



This symbol on the product or packaging means that according to local laws and regulations this product should be not be disposed of in household waste but sent for recycling. Please take it to a collection point designated by your local authorities once it has reached the end of its life, some will accept products for free. By recycling the product and its packaging in this manner you help to conserve the environment and protect human health.

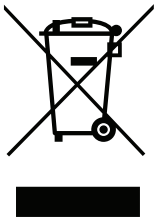
D-Link and the Environment

At D-Link, we understand and are committed to reducing any impact our operations and products may have on the environment. To minimise this impact D-Link designs and builds its products to be as environmentally friendly as possible, by using recyclable, low toxic materials in both products and packaging.

D-Link recommends that you always switch off or unplug your D-Link products when they are not in use. By doing so you will help to save energy and reduce CO2 emissions.

To learn more about our environmentally responsible products and packaging please visit **www.dlinkgreen.com**.

DEUTSCH **DE**



Dieses Symbol auf dem Produkt oder der Verpackung weist darauf hin, dass dieses Produkt gemäß bestehender örtlicher Gesetze und Vorschriften nicht über den normalen Hausmüll entsorgt werden sollte, sondern einer Wiederverwertung zuzuführen ist. Bringen Sie es bitte zu einer von Ihrer Kommunalbehörde entsprechend amtlich ausgewiesenen Sammelstelle, sobald das Produkt das Ende seiner Nutzungsdauer erreicht hat. Für die Annahme solcher Produkte erheben einige dieser Stellen keine Gebühren. Durch ein auf diese Weise durchgeführtes Recycling des Produkts und seiner Verpackung helfen Sie, die Umwelt zu schonen und die menschliche Gesundheit zu schützen.

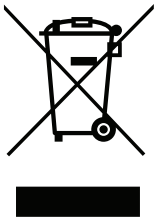
D-Link und die Umwelt

D-Link ist sich den möglichen Auswirkungen seiner Geschäftstätigkeiten und seiner Produkte auf die Umwelt bewusst und fühlt sich verpflichtet, diese entsprechend zu mindern. Zu diesem Zweck entwickelt und stellt D-Link seine Produkte mit dem Ziel größtmöglicher Umweltfreundlichkeit her und verwendet wiederverwertbare, schadstoffarme Materialien bei Produktherstellung und Verpackung.

D-Link empfiehlt, Ihre Produkte von D-Link, wenn nicht in Gebrauch, immer auszuschalten oder vom Netz zu nehmen. Auf diese Weise helfen Sie, Energie zu sparen und CO2-Emissionen zu reduzieren.

Wenn Sie mehr über unsere umweltgerechten Produkte und Verpackungen wissen möchten, finden Sie entsprechende Informationen im Internet unter **www.dlinkgreen.com**.

FRANÇAIS FR



Ce symbole apposé sur le produit ou son emballage signifie que, conformément aux lois et règlementations locales, ce produit ne doit pas être éliminé avec les déchets domestiques mais recyclé. Veuillez le rapporter à un point de collecte prévu à cet effet par les autorités locales; certains accepteront vos produits gratuitement. En recyclant le produit et son emballage de cette manière, vous aidez à préserver l'environnement et à protéger la santé de l'homme.

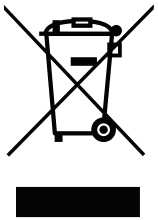
D-Link et l'environnement

Chez D-Link, nous sommes conscients de l'impact de nos opérations et produits sur l'environnement et nous engageons à le réduire. Pour limiter cet impact, D-Link conçoit et fabrique ses produits de manière aussi écologique que possible, en utilisant des matériaux recyclables et faiblement toxiques, tant dans ses produits que ses emballages.

D-Link recommande de toujours éteindre ou débrancher vos produits D-Link lorsque vous ne les utilisez pas. Vous réaliserez ainsi des économies d'énergie et réduirez vos émissions de CO2.

Pour en savoir plus sur les produits et emballages respectueux de l'environnement, veuillez consulter le **www.dlinkgreen.com**.

ESPAÑOL ES



Este símbolo en el producto o el embalaje significa que, de acuerdo con la legislación y la normativa local, este producto no se debe desechar en la basura doméstica sino que se debe reciclar. Llévelo a un punto de recogida designado por las autoridades locales una vez que ha llegado al fin de su vida útil; algunos de ellos aceptan recogerlos de forma gratuita. Al reciclar el producto y su embalaje de esta forma, contribuye a preservar el medio ambiente y a proteger la salud de los seres humanos.

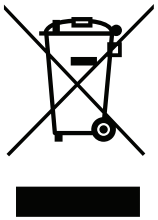
D-Link y el medio ambiente

En D-Link, comprendemos y estamos comprometidos con la reducción del impacto que puedan tener nuestras actividades y nuestros productos en el medio ambiente. Para reducir este impacto, D-Link diseña y fabrica sus productos para que sean lo más ecológicos posible, utilizando materiales reciclables y de baja toxicidad tanto en los productos como en el embalaje.

D-Link recomienda apagar o desenchufar los productos D-Link cuando no se estén utilizando. Al hacerlo, contribuirá a ahorrar energía y a reducir las emisiones de CO2.

Para obtener más información acerca de nuestros productos y embalajes ecológicos, visite el sitio **www.dlinkgreen.com**.

ITALIANO IT



La presenza di questo simbolo sul prodotto o sulla confezione del prodotto indica che, in conformità alle leggi e alle normative locali, questo prodotto non deve essere smaltito nei rifiuti domestici, ma avviato al riciclo. Una volta terminato il ciclo di vita utile, portare il prodotto presso un punto di raccolta indicato dalle autorità locali. Alcuni questi punti di raccolta accettano gratuitamente i prodotti da riciclare. Scegliendo di riciclare il prodotto e il relativo imballaggio, si contribuirà a preservare l'ambiente e a salvaguardare la salute umana.

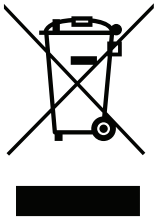
D-Link e l'ambiente

D-Link cerca da sempre di ridurre l'impatto ambientale dei propri stabilimenti e dei propri prodotti. Allo scopo di ridurre al minimo tale impatto, D-Link progetta e realizza i propri prodotti in modo che rispettino il più possibile l'ambiente, utilizzando materiali riciclabili a basso tasso di tossicità sia per i prodotti che per gli imballaggi.

D-Link raccomanda di spegnere sempre i prodotti D-Link o di scollegarne la spina quando non vengono utilizzati. In questo modo si contribuirà a risparmiare energia e a ridurre le emissioni di anidride carbonica.

Per ulteriori informazioni sui prodotti e sugli imballaggi D-Link a ridotto impatto ambientale, visitate il sito all'indirizzo **www.dlinkgreen.com**.

NEDERLANDS NL



Dit symbool op het product of de verpakking betekent dat dit product volgens de plaatselijke wetgeving niet mag worden weggegooid met het huishoudelijk afval, maar voor recyclage moeten worden ingeleverd. Zodra het product het einde van de levensduur heeft bereikt, dient u het naar een inzamelpunt te brengen dat hiertoe werd aangeduid door uw plaatselijke autoriteiten, sommige autoriteiten accepteren producten zonder dat u hiervoor dient te betalen. Door het product en de verpakking op deze manier te recyclen helpt u het milieu en de gezondheid van de mens te beschermen.

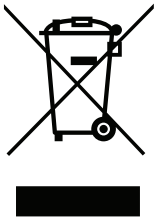
D-Link en het milieu

Bij D-Link spannen we ons in om de impact van onze handelingen en producten op het milieu te beperken. Om deze impact te beperken, ontwerpt en bouwt D-Link zijn producten zo milieuvriendelijk mogelijk, door het gebruik van recycleerbare producten met lage toxiciteit in product en verpakking.

D-Link raadt aan om steeds uw D-Link producten uit te schakelen of uit de stekker te halen wanneer u ze niet gebruikt. Door dit te doen bespaart u energie en beperkt u de CO2-emissies.

Breng een bezoek aan **www.dlinkgreen.com** voor meer informatie over onze milieuverantwoorde producten en verpakkingen.

POLSKI PL



Ten symbol umieszczony na produkcie lub opakowaniu oznacza, że zgodnie z miejscowym prawem i lokalnymi przepisami niniejszego produktu nie wolno wyrzucać jak odpady czy śmieci z gospodarstwa domowego, lecz należy go poddać procesowi recyklingu. Po zakończeniu użytkowania produktu, niektóre odpowiednie do tego celu podmioty przyjmą takie produkty nieodpłatnie, dlatego prosimy dostarczyć go do punktu zbiórki wskazanego przez lokalne władze. Poprzez proces recyklingu i dzięki takiemu postępowaniu z produktem oraz jego opakowaniem, pomogą Państwo chronić środowisko naturalne i dbać o ludzkie zdrowie.

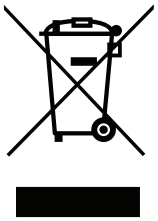
D-Link i środowisko

D-Link podchodzimy w sposób świadomy do ochrony otoczenia oraz jesteśmy zaangażowani w zmniejszanie wpływu naszych działań i produktów na środowisko naturalne. W celu zminimalizowania takiego wpływu firma D-Link konstruuje i wytwarza swoje produkty w taki sposób, aby były one jak najbardziej przyjazne środowisku, stosując do tych celów materiały nadające się do powtórnego wykorzystania, charakteryzujące się małą toksycznością zarówno w przypadku samych produktów jak i opakowań.

Firma D-Link zaleca, aby Państwo zawsze prawidłowo wyłączali z użytku swoje produkty D-Link, gdy nie są one wykorzystywane. Postępując w ten sposób pozwalają Państwo oszczędzać energię i zmniejszać emisje CO2.

Aby dowiedzieć się więcej na temat produktów i opakowań mających wpływ na środowisko prosimy zapoznać się ze stroną Internetową **www.dlinkgreen.com**.

ČESKY CZ



Tento symbol na výrobku nebo jeho obalu znamená, že podle místně platných předpisů se výrobek nesmí vyhazovat do komunálního odpadu, ale odeslat k recyklaci. Až výrobek doslouží, odneste jej prosím na sběrné místo určené místními úřady k tomuto účelu. Některá sběrná místa přijímají výrobky zdarma. Recyklací výrobku i obalu pomáháte chránit životní prostředí i lidské zdraví.

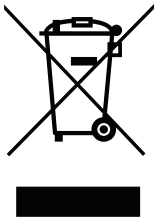
D-Link a životní prostředí

Ve společnosti D-Link jsme si vědomi vlivu našich provozů a výrobků na životní prostředí a snažíme se o minimalizaci těchto vlivů. Proto své výrobky navrhujeme a vyrábíme tak, aby byly co nejekologičtější, a ve výrobcích i obalech používáme recyklovatelné a nízkotoxické materiály.

Společnost D-Link doporučuje, abyste své výrobky značky D-Link vypnuli nebo vytáhli ze zásuvky vždy, když je nepoužíváte. Pomůžete tak šetřit energii a snížit emise CO2.

Více informací o našich ekologických výrobcích a obalech najdete na adrese **www.dlinkgreen.com**.

MAGYAR **HU**



Ez a szimbólum a terméken vagy a csomagoláson azt jelenti, hogy a helyi törvényeknek és szabályoknak megfelelően ez a termék nem semmisíthető meg a háztartási hulladékkal együtt, hanem újrahasznosításra kell küldeni. Kérjük, hogy a termék élettartamának elteltét követően vigye azt a helyi hatóság által kijelölt gyűjtőhelyre. A termékek egyes helyeken ingyen elhelyezhetők. A termék és a csomagolás újrahasznosításával segíti védeni a környezetet és az emberek egészségét.

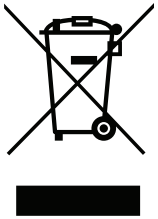
A D-Link és a környezet

A D-Linknél megértjük és elkötelezettek vagyunk a műveleteink és termékeink környezetre gyakorolt hatásainak csökkentésére. Az ezen hatás csökkentése érdekében a D-Link a lehető leginkább környezetbarát termékeket tervez és gyárt azáltal, hogy újrahasznosítható, alacsony károsanyag-tartalmú termékeket gyárt és csomagolásokat alkalmaz.

A D-Link azt javasolja, hogy mindig kapcsolja ki vagy húzza ki a D-Link termékeket a tápforrásból, ha nem használja azokat. Ezzel segít az energia megtakarításában és a széndioxid kibocsátásának csökkentésében.

Környezetbarát termékeinkről és csomagolásainkról további információkat a **www.dlinkgreen.com** weboldalon tudhat meg.

NORSK **NO**



Dette symbolet på produktet eller forpakningen betyr at dette produktet ifølge lokale lover og forskrifter ikke skal kastes sammen med husholdningsavfall, men leveres inn til gjenvinning. Vennligst ta det til et innsamlingssted anvist av lokale myndigheter når det er kommet til slutten av levetiden. Noen steder aksepteres produkter uten avgift. Ved på denne måten å gjenvinne produktet og forpakningen hjelper du å verne miljøet og beskytte folks helse.

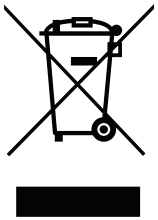
D-Link og miljøet

Hos D-Link forstår vi oss på og er forpliktet til å minske innvirkningen som vår drift og våre produkter kan ha på miljøet. For å minimalisere denne innvirkningen designer og lager D-Link produkter som er så miljøvennlig som mulig, ved å bruke resirkulerbare, lav-toksiske materialer både i produktene og forpakningen.

D-Link anbefaler at du alltid slår av eller frakobler D-Link-produkter når de ikke er i bruk. Ved å gjøre dette hjelper du å spare energi og å redusere CO2-utslipp.

For mer informasjon angående våre miljøansvarlige produkter og forpakninger kan du gå til **www.dlinkgreen.com**.

DANSK DK



Dette symbol på produktet eller emballagen betyder, at dette produkt i henhold til lokale love og regler ikke må bortskaffes som husholdningsaffald, mens skal sendes til genbrug. Indlever produktet til et indsamlingssted som angivet af de lokale myndigheder, når det er nået til slutningen af dets levetid. I nogle tilfælde vil produktet blive modtaget gratis. Ved at indlevere produktet og dets emballage til genbrug på denne måde bidrager du til at beskytte miljøet og den menneskelige sundhed.

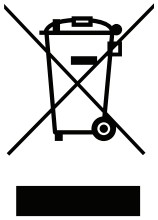
D-Link og miljøet

Hos D-Link forstår vi og bestræber os på at reducere enhver indvirkning, som vores aktiviteter og produkter kan have på miljøet. For at minimere denne indvirkning designer og producerer D-Link sine produkter, så de er så miljøvenlige som muligt, ved at bruge genanvendelige materialer med lavt giftighedsniveau i både produkter og emballage.

D-Link anbefaler, at du altid slukker eller frakobler dine D-Link-produkter, når de ikke er i brug. Ved at gøre det bidrager du til at spare energi og reducere CO2-udledningerne.

Du kan finde flere oplysninger om vores miljømæssigt ansvarlige produkter og emballage på **www.dlinkgreen.com**.

SUOMI FI



Tämä symboli tuotteen pakkauksessa tarkoittaa, että paikallisten lakien ja säännösten mukaisesti tätä tuotetta ei pidä hävittää yleisen kotitalousjätteen seassa vaan se tulee toimittaa kierrätettäväksi. Kun tuote on elinkaarensa päässä, toimita se lähimpään viranomaisten hyväksymään kierrätyspisteeseen. Kierrättämällä käytetyn tuotteen ja sen pakkauksen autat tukemaan sekä ympäristön että ihmisten terveyttä ja hyvinvointia.

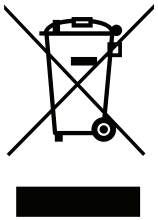
D-Link ja ympäristö

D-Link ymmärtää ympäristönsuojelun tärkeyden ja on sitoutunut vähentämään tuotteistaan ja niiden valmistuksesta ympäristölle mahdollisesti aiheutuvia haittavaikutuksia. Nämä negatiiviset vaikutukset minimoidakseen D-Link suunnittelee ja valmistaa tuotteensa mahdollisimman ympäristöystävällisiksi käyttämällä kierrätettäviä, alhaisia pitoisuuksia haitallisia aineita sisältäviä materiaaleja sekä tuotteissaan että niiden pakkauksissa.

Suosittelemme, että irrotat D-Link-tuotteesi virtalähteestä tai sammutat ne aina, kun ne eivät ole käytössä. Toimimalla näin autat säästämään energiaa ja vähentämään hiilidioksiidipäästöjä.

Lue lisää ympäristöystävällisistä D-Link-tuotteista ja pakkauksistamme osoitteesta **www.dlinkgreen.com**.

SVENSKA SE



Den här symbolen på produkten eller förpackningen betyder att produkten enligt lokala lagar och föreskrifter inte skall kastas i hushållssoporna utan i stället återvinnas. Ta den vid slutet av dess livslängd till en av din lokala myndighet utsedd uppsamlingsplats, vissa accepterar produkter utan kostnad. Genom att på detta sätt återvinna produkten och förpackningen hjälper du till att bevara miljön och skydda människors hälsa.

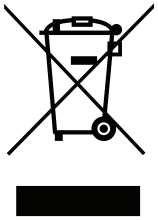
D-Link och miljön

På D-Link förstår vi och är fast beslutna att minska den påverkan våra verksamheter och produkter kan ha på miljön. För att minska denna påverkan utformar och bygger D-Link sina produkter för att de ska vara så miljövänliga som möjligt, genom att använda återvinningsbara material med låg gifthalt i både produkter och förpackningar.

D-Link rekommenderar att du alltid stänger av eller kopplar ur dina D-Link produkter när du inte använder dem. Genom att göra detta hjälper du till att spara energi och minska utsläpp av koldioxid.

För mer information om våra miljöansvariga produkter och förpackningar **www.dlinkgreen.com**.

PORTUGUÊS PT



Este símbolo no produto ou embalagem significa que, de acordo com as leis e regulamentações locais, este produto não deverá ser eliminado juntamente com o lixo doméstico mas enviado para a reciclagem. Transporte-o para um ponto de recolha designado pelas suas autoridades locais quando este tiver atingido o fim da sua vida útil, alguns destes pontos aceitam produtos gratuitamente. Ao reciclar o produto e respectiva embalagem desta forma, ajuda a preservar o ambiente e protege a saúde humana.

A D-Link e o ambiente

Na D-Link compreendemos e comprometemo-nos com a redução do impacto que as nossas operações e produtos possam ter no ambiente. Para minimizar este impacto a D-Link concebe e constrói os seus produtos para que estes sejam o mais inofensivos para o ambiente possível, utilizando meteriais recicláveis e não tóxicos tanto nos produtos como nas embalagens.

A D-Link recomenda que desligue os seus produtos D-Link quando estes não se encontrarem em utilização. Com esta acção ajudará a poupar energia e reduzir as emissões de CO2.

Para saber mais sobre os nossos produtos e embalagens responsáveis a nível ambiental visite **www.dlinkgreen.com**.