



User Manual

Wireless AC1200 Dual Band Gigabit Cloud Router

DIR-860L

Preface

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

Manual Revisions

Revision	Date	Description
1.0	April 19, 2013	• Initial release for Revision A1

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Table of Contents

Preface	i	PPTP	31
Manual Revisions	i	L2TP	33
Trademarks	i	DS-Lite	35
Product Overview	1	Internet Connection Setup Wizard.....	36
Package Contents.....	1	Wireless Settings	41
System Requirements	2	Wireless Connection Setup Wizard.....	42
Introduction	3	Add Wireless Device with WPS Wizard	44
Hardware Overview	4	Manual Wireless Settings	46
Connections	4	802.11n/g (2.4GHz).....	46
LEDs	5	802.11ac/n/a (5GHz)	47
Installation	6	Wireless Security	48
Before you Begin.....	6	What is WPA?	48
Wireless Installation Considerations.....	7	WPA/WPA2-Personal (PSK)	49
Connect to your Network	8	Configure WPA/WPA2-Enterprise (RADIUS).....	50
Connect to an Existing Router	11	Network Settings	52
Configuration	13	Router Settings	52
Quick Setup Wizard.....	14	DHCP Server Settings.....	53
QRS Mobile App	21	DHCP Reservation	55
SharePort Mobile App	22	Storage	56
Web-based Configuration Utility	26	Access Files from the Internet	57
Internet Connection Setup	27	Media Server.....	58
Static (assigned by ISP)	28	IPv6	59
Dynamic (Cable)	29	IPv6 Internet Connection Setup Wizard	61
PPPoE (DSL).....	30	IPv6 Manual Setup.....	66
		Auto Detection	66
		Static IPv6	67

Autoconfiguration	68	Time	98
PPPoE.....	69	SysLog	99
IPv6 in IPv4 Tunneling	71	Email Settings.....	100
6 to 4 Tunneling.....	72	System	101
6rd	73	Firmware	102
Local Connectivity	74	Language Pack Upgrade	102
mydlink Settings	75	Dynamic DNS	103
Advanced.....	76	System Check.....	105
Virtual Server	76	Schedules	106
Port Forwarding	77	Status	107
Application Rules.....	78	Device Info	107
QoS Engine.....	79	Logs.....	108
Network Filters.....	81	Statistics	109
Access Control.....	82	Internet Sessions.....	110
Access Control Wizard	82	Wireless.....	111
Website Filters.....	85	Routing	112
Inbound Filters.....	86	IPv6	113
Firewall Settings.....	87	IPV6 Routing	114
Routing.....	89	Support	115
Advanced Wireless	90	Connect a Wireless Client to your Router	116
Wi-Fi Protected Setup (WPS)	91	WPS Button.....	116
WPS Button	92	Windows® 8.....	117
Advanced Network Settings	93	Windows® 7.....	119
Guest Zone	94	WPA/WPA2	119
IPv6 Firewall	95	WPS.....	122
IPv6 Routing	96	Windows Vista®	126
Tools	97	WPA/WPA2	127
Admin.....	97		

WPS/WCN 2.0	129
Windows® XP.....	130
WPA/WPA2	131
Troubleshooting	133
Reset Router/Forgot Password	134
Wireless Basics	137
What is Wireless?.....	138
Tips.....	140
Wireless Modes.....	141
Networking Basics	142
Check your IP address.....	142
Windows® 8 Users.....	142
Windows® 7/Vista® Users.....	142
Windows® XP Users	142
Statically Assign an IP Address	143
Windows® 8 Users	143
Windows® 7/ Vista® Users	144
Windows® XP Users	145
Technical Specifications	146
Contacting Technical Support	148
GPL Code Statement.....	149
Warranty.....	161
Registration	168

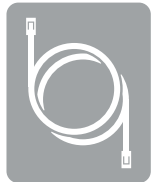
Package Contents



DIR-860L Wireless AC1200 Dual Band Gigabit Cloud Router



Ethernet Cable



Power Adapter



Wi-Fi Configuration Card



Quick Install 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 DIR-860L will cause damage and void the warranty for this product.

System Requirements

<p>Network Requirements</p>	<ul style="list-style-type: none"> • An Ethernet-based broadband modem
<p>Web-based Configuration Utility Requirements</p>	<p>Computer with the following:</p> <ul style="list-style-type: none"> • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter or wireless adapter <p>Supported Browsers:</p> <ul style="list-style-type: none"> • Internet Explorer 7 or higher • Firefox • Safari 4 or higher • Chrome <p>Windows® Users: Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.</p>
<p>mydlink Requirements</p>	<ul style="list-style-type: none"> • iPhone/iPad/iPod Touch (iOS 3.0 or higher) • Android device (1.6 or higher) • Computer with the following browser requirements: <ul style="list-style-type: none"> • Internet Explorer 7 or higher • Firefox • Safari 5 or higher • Chrome <p><small>iPhone, iPad, and iPod touch are registered trademarks of Apple Inc. Android is a trademark of Google, Inc.</small></p>

Introduction

The DIR-860L Wireless AC1200 Dual Band Gigabit Cloud Router provides revolutionary Gigabit 802.11ac wireless speed - up to 1200Mbps – for flawless HD video streaming to multiple devices.

With ground-breaking mydlink Cloud Services, you can monitor your home network from anywhere on your iPhone, iPad, and Android device. See websites that are being visited, block unwanted devices and receive automatic email alerts when unauthorized connections are attempted.

With SharePort Mobile, wirelessly access your media on your iPhone, iPad or Android device from any connected USB drive. Best of all, the apps for network management and file access are free.

* Maximum wireless signal rate derived from IEEE Standard 802.11ac (draft), 802.11a, 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

Connections



1	USB Port	Connect a USB flash drive to share content throughout your network.
2	WPS Button	Press to start the WPS process. The Power LED will blink during this process.
3	LAN Ports (1-4)	Connect 10/100/1000 Ethernet devices such as computers, switches, storage (NAS) devices, and game consoles.
4	Internet Port	Using an Ethernet cable, connect your broadband modem to this port.
5	Power Button	Press the power button to power on and off.
6	Power Receptor	Receptor for the supplied power adapter.
7	Reset Button	Press and hold the reset button with a paper clip for 10 seconds to reset the router to the default factory settings.

Hardware Overview

LEDs



1	Power LED	A solid green light indicates a proper connection to the power supply. The light will be solid orange during boot-up and will blink green during the WPS process.
2	Internet LED	A solid light indicates a connection to the Internet port. If the LED is orange, the connection is good but the router cannot connect to the Internet. If this LED is blinking orange, this indicates that the "on demand" connection type is set and the Internet connection is idle.

Installation

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

Before you Begin

- Please configure the router with the computer that was last connected directly to your modem.
- **Users with DSL providers** - If you are using a PPPoE connection, you will need your PPPoE user name and password. If you do not have this information, contact your Internet provider. Do not proceed until you have this information.
- **Users with Cable providers** - Make sure you unplug the power to your modem. In some cases, you may need to turn it off for up to 5 minutes.
- **Advanced Users** - If your ISP provided you with a modem/router combo, you will need to set it to “bridge” mode so the DIR-860L router can work properly. Please contact your ISP or refer to the user manual for your modem/router device.

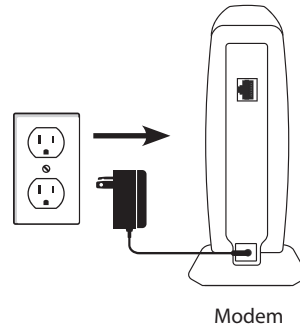
Wireless Installation Considerations

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

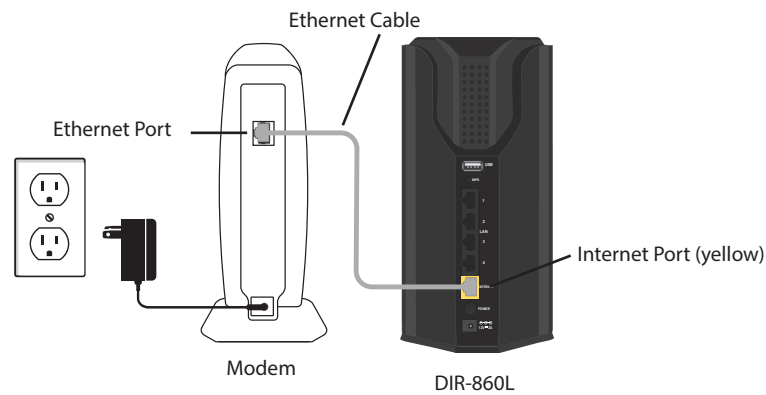
1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between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

Connect to your Network

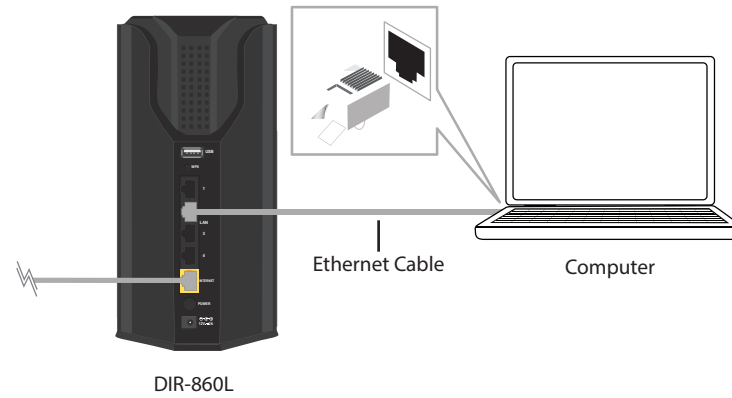
1. Turn off and unplug your DSL or Cable modem. This is required.



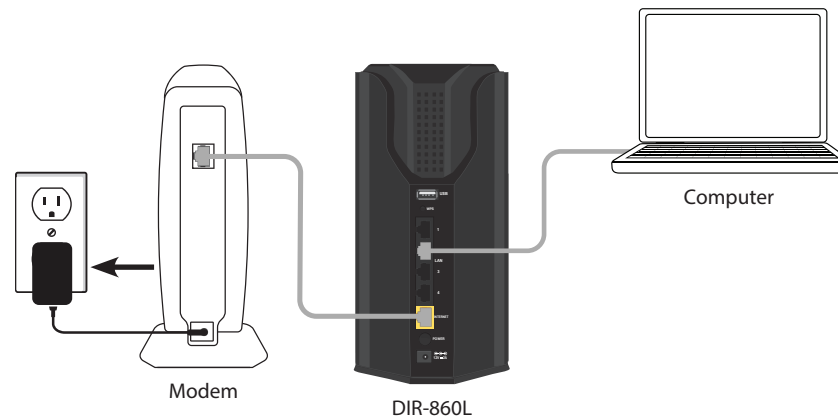
2. Connect an Ethernet cable from the Internet port of the router to the Ethernet port on your DSL or Cable modem.



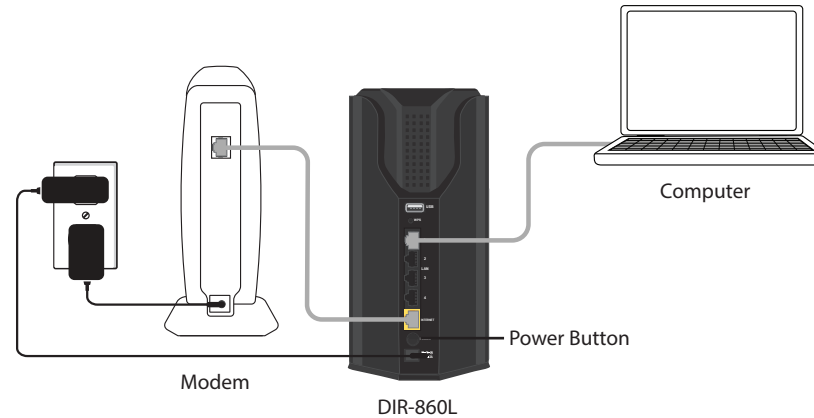
3. Connect another Ethernet cable from the Ethernet port on your computer to one of the LAN ports on the router.



4. Plug the power back into your DSL or Cable modem. Please wait about one minute before continuing.



5. Plug the power adapter into your router and connect to an available power outlet or surge protector. If the Power LED does not light up, press the Power button on the back of the router.



6. After the router has powered up, verify that the power (green) and Internet (orange or green) LEDs are both lit. Please skip to page 13 to configure your router and use the manual setup procedure to configure your network and wireless settings. If you did not connect to the Internet, use the D-Link Setup Wizard (refer to page 14).

Connect to an Existing Router

Note: *It is strongly recommended to replace your existing router with the DIR-860L instead of using both. If your modem is a combo router, you may want to contact your ISP or manufacturer's user guide to put the router into Bridge mode, which will 'turn off' the router (NAT) functions.*

If you are connecting the DIR-860L router to an existing router to use as a wireless access point and/or switch, you will have to do the following to the DIR-860L before connecting it to your network:

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

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

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.
2. Open a web browser, enter **http://192.168.0.1** (or **http://dlinkrouter.local./**) and press **Enter**. When the login window appears, set the user name to **Admin** and leave the password box empty. Click **Log In** to continue.
3. Click on **Advanced** and then click **Advanced Network**. Uncheck the **Enable UPnP** checkbox. Click **Save Settings** to continue.
4. Click **Setup** and then click **Network Settings**. Uncheck the **Enable DHCP Server** checkbox. Click **Save Settings** to continue.

5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.
6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.
7. Connect an Ethernet cable in one of the **LAN** ports of the router and connect it to your other router. Do not plug anything into the Internet (WAN) port of the D-Link router.
8. You may now use the other 3 LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

Configuration

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

- **QRS Mobile App** - Use your iPhone, iPad, or Android device to configure your router. Refer to page 21
- **D-Link Setup Wizard** - This wizard will launch when you log into the router for the first time. Refer to page 14.
- **Manual Setup** - Log into the router and manually configure your router (advanced users only). Refer to page 27.

Quick Setup Wizard

If this is your first time installing the router, launch your web browser (e.g., Internet Explorer), and you will automatically be directed to the **Wizard Setup Screen**.

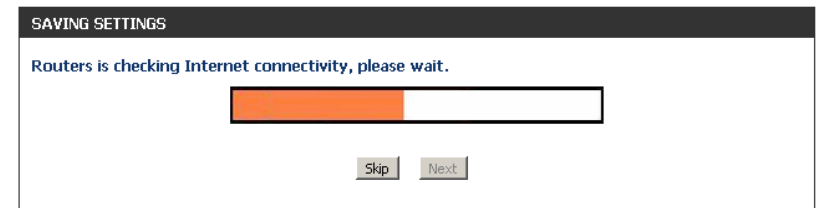
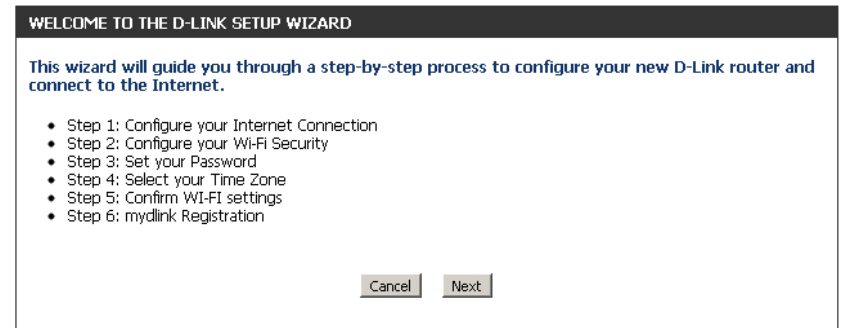
If you have already configured your settings and you would like to access the configuration utility, please refer to page 26.

If this is your first time logging into the router, this wizard will start automatically.

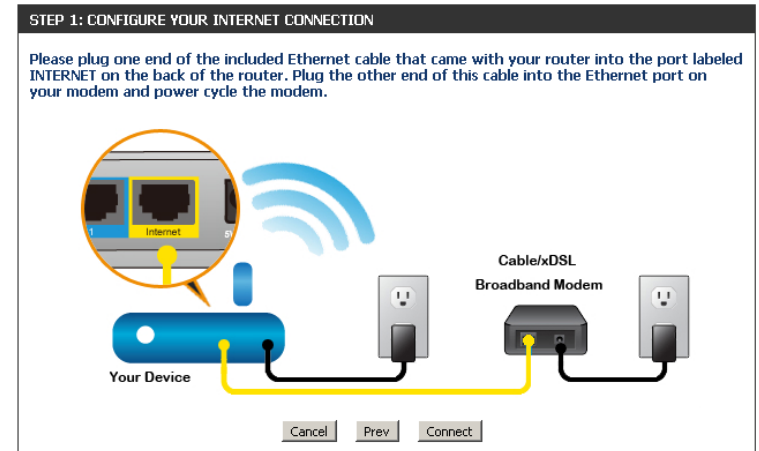
This wizard is designed to guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

Click **Next** to continue.

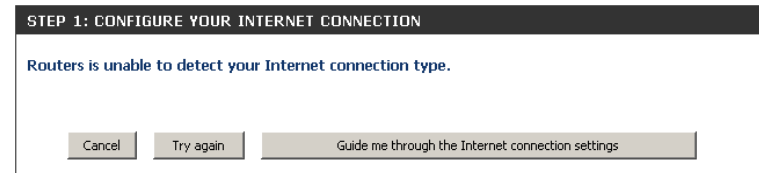
Please wait while your router detects your internet connection type. If the router detects your Internet connection, you may need to enter your ISP information such as username and password. (See instructions on page 16 for PPPoE, PPTP and L2TP).



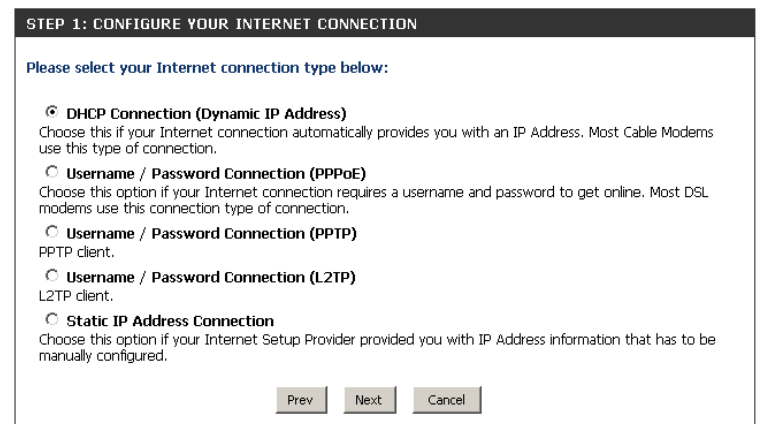
If the router does not detect a valid Ethernet connection from the Internet port, this screen will appear. Connect your broadband modem to the Internet port and then click **Connect**.



If the router detects an Ethernet connection but does not detect the type of Internet connection you have, this screen will appear. Click **Guide me through the Internet Connection Settings** to display a list of connection types to choose from.



Select your Internet connection type. You can select **DHCP Connection (Dynamic IP Address)** if your Internet connection automatically provides you with an IP Address. This option is commonly used for cable modem services. Click **Next** to continue.



If the router detected or you selected **PPPoE**, enter your PPPoE username and password and 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.

If the router detected or you selected **PPTP**, enter your PPTP username, password, and other information supplied by your ISP. Click **Next** to continue.

If the router detected or you selected **L2TP**, enter your L2TP username, password, and other information supplied by your ISP. Click **Next** to continue.

SET USERNAME AND PASSWORD CONNECTION (PPPoE)

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

User Name :

Password :

SET USERNAME AND PASSWORD CONNECTION (PPTP)

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

Address Mode : Dynamic IP Static IP

PPTP IP Address :

PPTP Subnet Mask :

PPTP Gateway IP Address :

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

User Name :

Password :

Verify Password :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address :

SET USERNAME AND PASSWORD CONNECTION (L2TP)

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

Address Mode : Dynamic IP Static IP

L2TP IP Address :

L2TP Subnet Mask :

L2TP Gateway IP Address :

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

User Name :

Password :

Verify Password :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address :

If the router detected or you selected **Static**, enter the IP and DNS settings supplied by your ISP. Click **Next** to continue.

SET STATIC IP ADDRESS CONNECTION

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

IP Address :

Subnet Mask :

Gateway Address :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address :

For both the 2.4GHz and 5GHz segments, create a wireless network name (SSID) using up to 32 characters.

Create a wireless security passphrase or key (between 8-63 characters). Your wireless clients will need to have this passphrase or key entered to be able to connect to your wireless network.

Click **Next** to continue.

STEP 2: CONFIGURE YOUR WI-FI SECURITY

Give your Wi-Fi network a name and a password. (2.4GHz Band)

Wi-Fi Network Name (SSID) : (Using up to 32 characters)

Wi-Fi Password : (Between 8 and 63 characters)

Give your Wi-Fi network a name and a password. (5GHz Band)

Wi-Fi Network Name (SSID) : (Using up to 32 characters)

Wi-Fi Password : (Between 8 and 63 characters)

In order to secure your router, please enter a new password. Check the **Enable Graphical Authentication** box to enable CAPTCHA authentication for added security. Click **Next** to continue.

STEP 3: SET YOUR PASSWORD

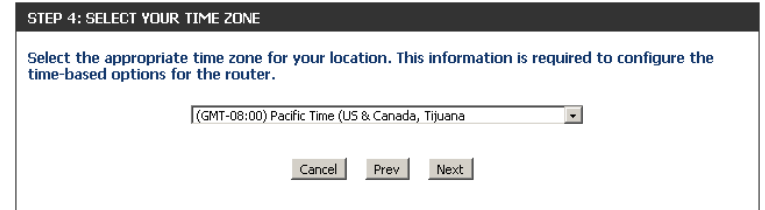
By default, your new D-Link Router does not have a password configured for administrator access to the Web-based configuration pages. To secure your new networking device, please set and verify a password below, and enabling CAPTCHA Graphical Authentication provides added security protection to prevent unauthorized online users and hacker software from accessing your network settings.

Password :

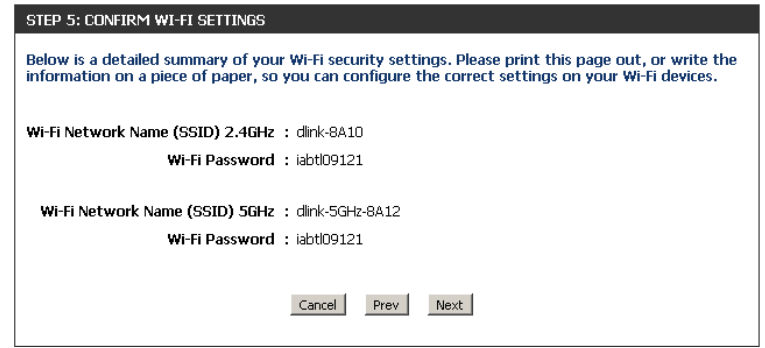
Verify Password :

Enable Graphical Authentication :

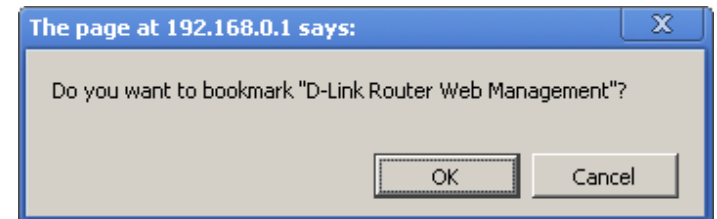
Select your time zone from the drop-down menu and click **Next** to continue.



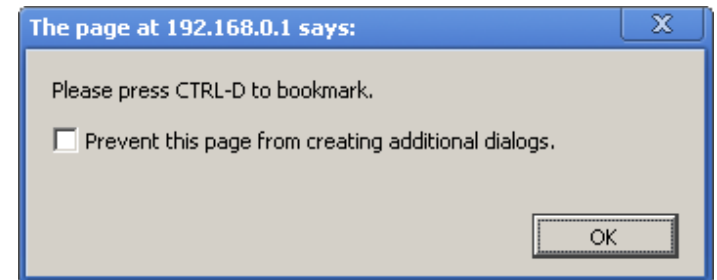
The *Confirm Wi-Fi Settings* window will display your wireless settings. Click **Next** to continue.



If you want to create a bookmark to the router, click **OK**. Click **Cancel** if you do not want to create a bookmark.



If you clicked **Yes**, a window may appear (depending on what web browser you are using) to create a bookmark.



To use the mydlink service (mydlink.com or the mydlink Lite app), you must have an account. Select if you do have a mydlink account or if you need to create one. Click **Next** to continue.

If you do not want to register at this time, click **Skip**.

If you clicked **Yes, I have a mydlink account** enter your mydlink account name (E-mail address) and password. Click **Login** to register your router.

If you clicked **No, I want to login with a new mydlink account** fill out the requested information and click **Sign up** to create your mydlink account. This is a free service. Refer to www.mydlink.com for more information.

STEP 6: MYDLINK REGISTRATION

This device is mydlink-enabled, which allows you to remotely monitor and manage your network through the mydlink.com website, or through the mydlink mobile app. You will be able to check your network speeds, see who is connected, view device browsing history, and receive notifications about new users or intrusion attempts.

You can register this device with your existing mydlink account. If you do not have one, you can create one now.

Do you have mydlink account?
 Yes, I have a mydlink account.
 No, I want to register and login with a new mydlink account.

STEP 6: MYDLINK REGISTRATION

E-mail Address (Account Name) :

Password :

STEP 6: MYDLINK REGISTRATION

Please fulfill the options to complete the registration.

E-mail Address (Account Name) :

Password :

Confirm Password :

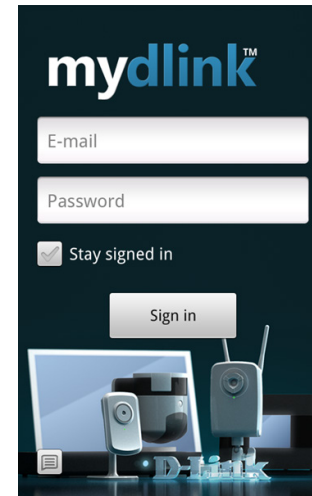
Last name :

First Name :

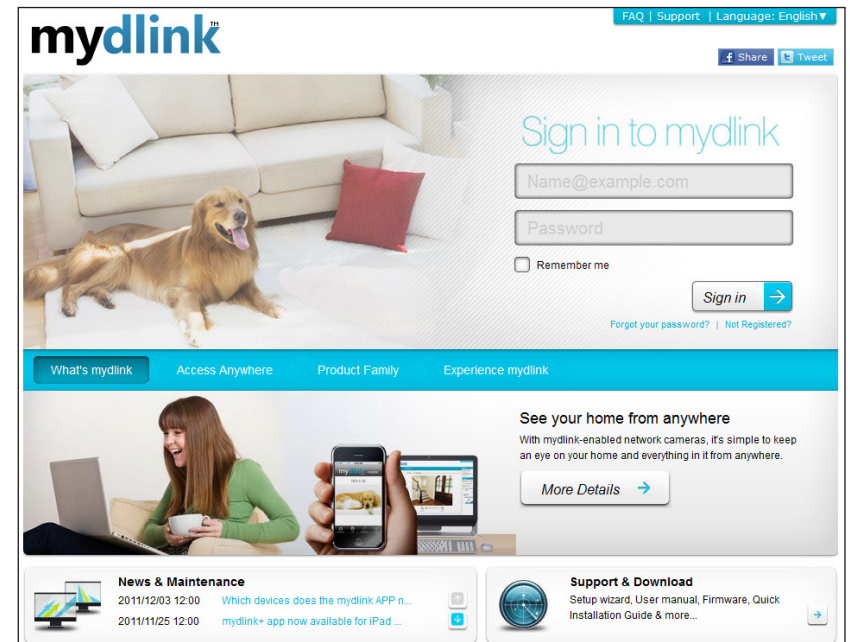
[I Accept the mydlink terms and conditions.](#)

The mydlink App will allow you to receive notices, browse network users, and configure your router from an iPhone/iPad/iPod Touch (iOS 3.0 or higher), or Android device (1.6 or higher).

To download the "mydlink lite" app, visit the Apple Store, Google Play or <http://mydlink.com/Lite>.



PC and Mac users can use the mydlink portal at <http://mydlink.com>.



QRS Mobile App

D-Link offers an app for your iPad, iPhone (iOS 4.3 or higher), or Android device to install and configure your router.

Step 1

From your iOS device, go to App Store, or from your Android device, go to Google Play, and search for 'D-Link'. Select **QRS Mobile** and then download it.

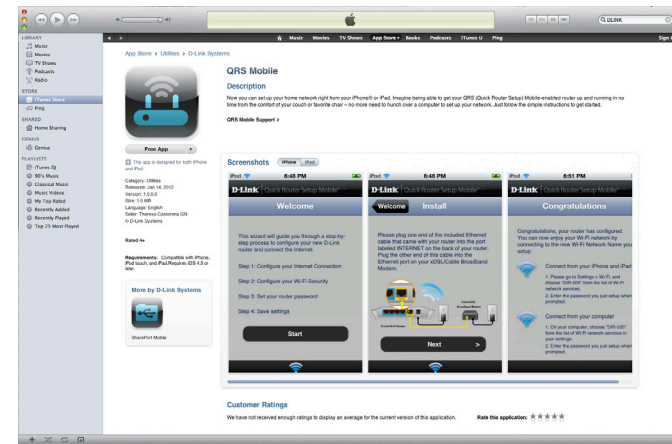
You may also scan this code to download.



iOS



Android



Step 2

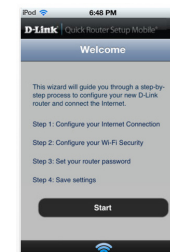
Once your app is installed, you may now configure your router. Connect to the router wirelessly by going to your wireless utility on your device. Scan for the wireless network name (SSID) as listed on the supplied info card. Select and then enter your security password (Wi-Fi Password).

D-Link Wi-Fi Configuration Card

Default Configuration	
Wi-Fi Name(SSID) 2.4Ghz: dlink-2c19	Wi-Fi Name(SSID) 5GHz *: dlink-2C1B-media
Wi-Fi Name(SSID) 5GHz: dlink-2C1B-media	Wi-Fi Password *: Password:gccnu80856
To configure your router, go to: http://dlinkrouter.local Or http://192.168.0.1 Username: "Admin" Password: " " (leave the field blank)	
*For applicable models DCW1902P010	

Step 3

Once you connect to the router, launch the QRS mobile app and it will guide you through the installation of your router.



SharePort Mobile App

The SharePort Mobile app will allow you to access files from a USB thumb drive that is plugged into your router. You must enable file sharing from the **Setup > Storage** page (refer to page 56) for this app to work properly.

1. Insert your USB flash drive into DIR-860L.

2. Scan the bar code to download the **SharePort Mobile** app from the app store to your iPhone, iPad, or Android device.



iOS



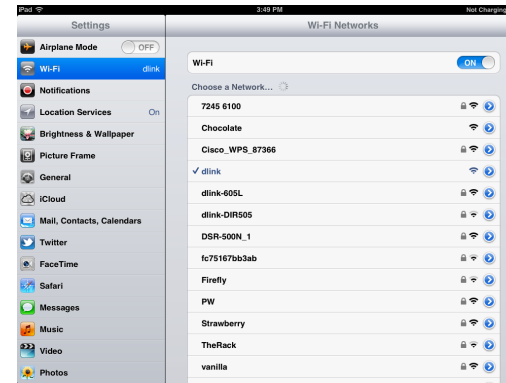
Android

3. From your iOS mobile device, click **Settings**.



Settings

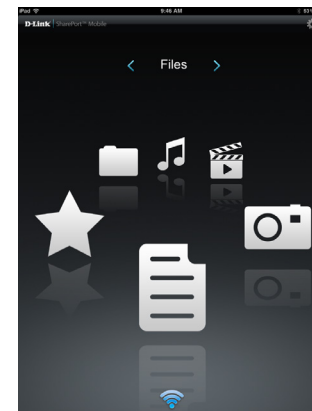
4. Click **Wi-Fi**, select the wireless network (SSID) that you created in the setup and then enter your Wi-Fi password.



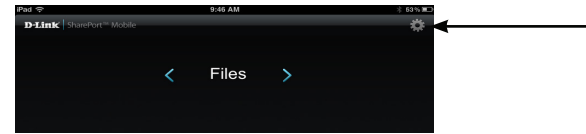
5. Once connected, click on the **SharePort Mobile** icon.



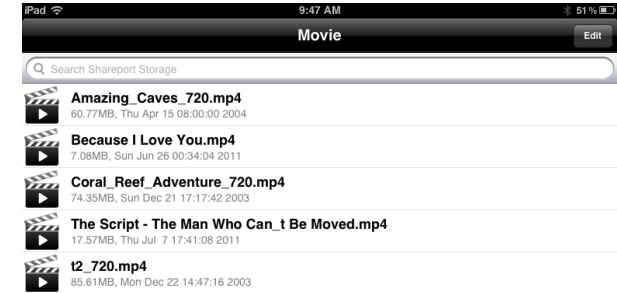
6. The following screen will appear.



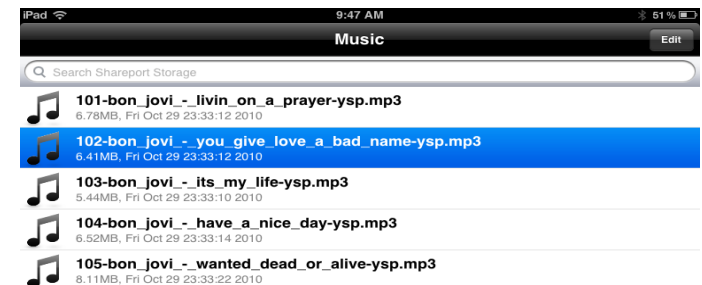
7. Click on **Settings** icon located on the right top corner of the screen. Click **Edit** to enter your User Name and Password. Once you finish, click **Done** to continue.



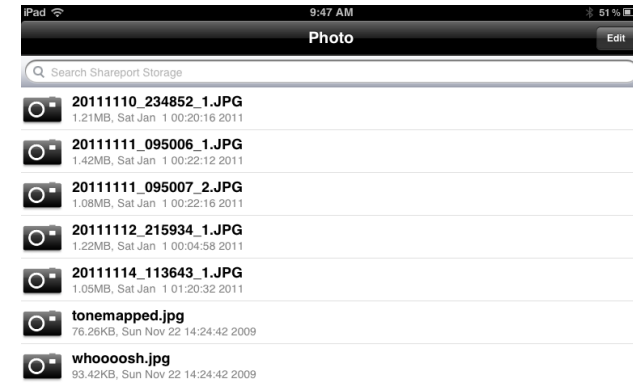
8. For the Movie section, click the movie icon to play your movie from your USB flash drive.



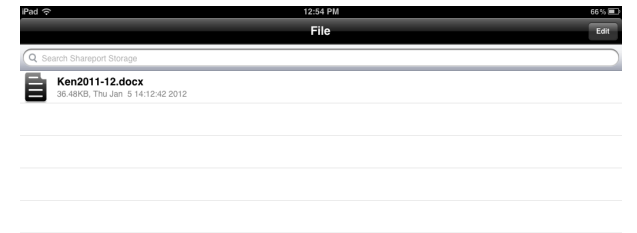
9. For the Music section, click the music icon to play your music from your USB flash drive.



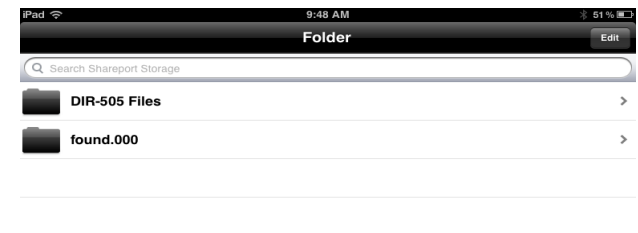
10. For the Photo section, click the photo icon to view your photos from your USB flash drive.



11. For the Files section, click on the files icon to view your files from your USB flash drive.

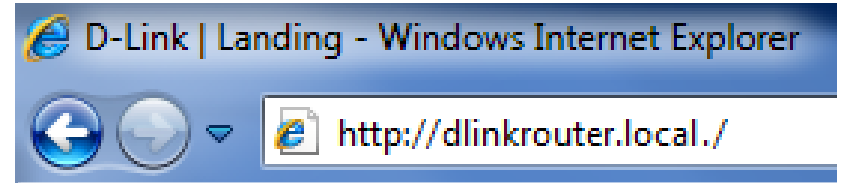


12. For the Folder section, click the folder icon to view your folders from your USB flash drive.



Web-based Configuration Utility

Open a web browser (e.g., Internet Explorer, Chrome, Firefox, or Safari) and enter **http://dlinkrouter.local/** or **http://192.168.0.1**.



Enter your password and click **Login**.

Note: *If you did not create a password with the Setup Wizard, leave the password blank by default.*

A screenshot of the "LOGIN" page for the D-Link router configuration utility. The page has an orange header with the word "LOGIN" in white. Below the header, the text "Login to the router :" is displayed. There are two input fields: "User Name" with the value "Admin" and "Password" which is currently blank. To the right of the password field is a "Login" button.

Internet Connection Setup

If you want to configure your router to connect to the Internet using the wizard, click **Internet Connection Setup Wizard**. Please refer to page 36.

If you consider yourself an advanced user, click **Manual Internet Connection Setup** to configure your connection manually. (Instructions for manual setup begin below.)

The next few pages will explain each of the ISP connection types. You can select the type from the **My Internet Connection** drop-down menu.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYLINK SETTINGS. The main content area is titled "INTERNET CONNECTION" and contains the following sections:

- INTERNET CONNECTION:** A introductory message recommending the Internet Connection Setup Wizard for first-time users and a link to the "Manual Internet Connection Setup" page.
- INTERNET CONNECTION SETUP WIZARD:** A section explaining the wizard's purpose and providing a "Note" about following installation steps. It includes a button labeled "Internet Connection Setup Wizard".
- MANUAL INTERNET CONNECTION OPTION:** A section for manual configuration with a "Manual Internet Connection Setup" button.

On the right side, there is a "Helpful Hints..." section with bullet points:

- If you are new to networking and have never configured a router before, click on **Internet Connection Setup Wizard** and the router will guide you through a few simple steps to get your network up and running.
- If you consider yourself an advanced user and have configured a router before, click **Manual Internet Connection Setup** to input all the settings manually.
- [More...](#)

The bottom of the page features a "WIRELESS" section header.

The screenshot shows the D-Link DIR-860L web interface at the WAN configuration stage. The top navigation bar and left sidebar are identical to the previous screenshot. The main content area is titled "WAN" and contains the following sections:

- WAN:** An introductory message about connection types (Static IP, DHCP, PPPoE, PPTP, L2TP, and DS-Lite) and a "Note" regarding PPPoE. It includes "Save Settings" and "Don't Save Settings" buttons.
- INTERNET CONNECTION TYPE:** A section titled "Choose the mode to be used by the router to connect to the Internet." with a dropdown menu set to "My Internet Connection is : Dynamic IP (DHCP)".
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE:** A section for configuring DHCP settings, including:
 - Host Name: [linkrouter]
 - Use Unicasting: (compatibility for some DHCP Servers)
 - Primary DNS Server: []
 - Secondary DNS Server: [] (optional)
 - MTU: [1500]
 - MAC Address: []
 - Clone Your PC's MAC Address button

On the right side, there is a "Helpful Hints..." section with bullet points:

- **Internet Connection:** When configuring the router to access the Internet, be sure to choose the correct **Internet Connection Type** from the drop down menu. If you are unsure of which option to choose, please contact your **Internet Service Provider (ISP)**.
- **Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.
- [More...](#)

The bottom of the page features a "WIRELESS" section header.

Manual Internet Setup

Static (assigned by ISP)

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

My Internet Connection: Select **Static IP** to manually enter the IP settings supplied by your ISP.

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

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

Default Gateway: Enter the Gateway assigned by your ISP.

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

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

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

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYDLINK SETTINGS. The main content area is titled 'WAN' and contains the following sections:

- INTERNET CONNECTION TYPE:** A dropdown menu is set to 'Static IP'. Below it, a note states: 'Choose the mode to be used by the router to connect to the Internet. My Internet Connection is : Static IP'.
- STATIC IP ADDRESS INTERNET CONNECTION TYPE:** A section for entering static IP information provided by the ISP. It includes input fields for:
 - IP Address
 - Subnet Mask (pre-filled with 0.0.0.0)
 - Default Gateway
 - Primary DNS Server
 - Secondary DNS Server (optional)
 - MTU (pre-filled with 1500)
 - MAC Address
 A 'Clone Your PC's MAC Address' button is located below the MAC Address field.

At the bottom of the main content area, there are 'Save Settings' and 'Don't Save Settings' buttons. On the right side of the interface, there is a 'Helpful Hints...' section with several bullet points providing additional information and support links.

Internet Setup

Dynamic (Cable)

My Internet Connection: Select **Dynamic IP (DHCP)** to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for cable modem services.

Host Name: The Host Name is optional but may be required by some ISPs. Leave blank if you are not sure.

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

Primary/Secondary DNS Server: Enter the Primary and secondary DNS server IP addresses assigned by your ISP. These addresses are usually obtained automatically from your ISP. Leave blank if you did not specifically receive these from your ISP.

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

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

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'D-Link', 'DIR-860L', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists menu items: 'INTERNET', 'WIRELESS SETTINGS', 'NETWORK SETTINGS', 'STORAGE', 'MEDIA SERVER', 'IPv6', and 'MYLINK SETTINGS'. The main content area is titled 'WAN' and contains the following sections:

- WAN:** A brief introduction to the Internet Connection type configuration, including a note about PPPoE and 'Save Settings' / 'Don't Save Settings' buttons.
- INTERNET CONNECTION TYPE:** A dropdown menu set to 'Dynamic IP (DHCP)'. Below it, a message states: 'Choose the mode to be used by the router to connect to the Internet.'
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE:** A section for configuring DHCP settings, including:
 - Host Name:
 - Use Unicasting: (compatibility for some DHCP Servers)
 - Primary DNS Server:
 - Secondary DNS Server: (optional)
 - MTU:
 - MAC Address:
 - Clone Your PC's MAC Address button

At the bottom of the main content area are 'Save Settings' and 'Don't Save Settings' buttons. The bottom navigation bar is labeled 'WIRELESS'. On the right side, there is a 'Helpful Hints...' section with links to 'Internet Connection', 'Support', and 'More...'.

Internet Setup

PPPoE (DSL)

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

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

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

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

Username: Enter your PPPoE user name.

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

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

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

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

DNS Mode: Select **Receive DNS from ISP** to automatically use your ISP's DNS servers or select **Enter DNS Manually** and enter the Primary and Secondary DNS Server Addresses of your choice.

MTU:

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

MAC Address:

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

The screenshot shows the D-Link web interface for configuring the Internet connection. The main heading is 'WAN' and the sub-heading is 'INTERNET CONNECTION TYPE'. The 'My Internet Connection is' dropdown menu is set to 'PPPoE (Username / Password)'. Below this, the 'PPPoE INTERNET CONNECTION TYPE' section is active, showing fields for 'Address Mode' (Dynamic IP selected), 'IP Address', 'Username', 'Password', 'Verify Password', 'Service Name', 'Reconnect Mode' (Always-on selected), 'Maximum Idle Time', 'DNS Mode' (Receive DNS from ISP selected), 'Primary DNS Server', 'Secondary DNS Server', 'MTU' (1492), and 'MAC Address'. A 'Clone Your PC's MAC Address' button is located at the bottom of the form. The interface also includes a 'Save Settings' button and a 'Don't Save Settings' button.

Internet Setup

PPTP

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

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

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

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

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

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

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

Username: Enter your PPTP username.

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

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

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

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'D-Link', 'DIR-860L', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYDLINK SETTINGS. The main content area is titled 'WAN' and contains the following sections:

- WAN:** A introductory text explaining the purpose of the section and a note about PPPoE. It includes 'Save Settings' and 'Don't Save Settings' buttons.
- INTERNET CONNECTION TYPE:** A section titled 'Choose the mode to be used by the router to connect to the Internet.' with a dropdown menu set to 'PPTP (Username / Password)'.
- PPTP INTERNET CONNECTION TYPE:** A section titled 'Enter the information provided by your Internet Service Provider (ISP)'. It contains several input fields:
 - Address Mode: Radio buttons for 'Dynamic IP' (selected) and 'Static IP'.
 - PPTP IP Address: Text input field.
 - PPTP Subnet Mask: Text input field.
 - PPTP Gateway IP Address: Text input field.
 - PPTP Server IP Address: Text input field.
 - Username: Text input field.
 - Password: Text input field.
 - Verify Password: Text input field.
 - Reconnect Mode: Radio buttons for 'Always-on' (selected), 'On demand', and 'Manual'. A 'New Schedule' button is next to 'Always-on'.
 - Maximum Idle Time: Text input field with '(minutes, 0=infinite)' as a hint.
 - Primary DNS Server: Text input field.
 - Secondary DNS Server: Text input field with '(optional)' as a hint.
 - MTU: Text input field with '1400' as the default value.
 - MAC Address: Text input field with a 'Clone Your PC's MAC Address' button.

At the bottom of the main content area, there are 'Save Settings' and 'Don't Save Settings' buttons. The footer of the page says 'WIRELESS'. On the right side, there is a 'Helpful hints...' section with links for 'Internet Connection', 'Support', and 'More...'.

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

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

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

Internet Setup

L2TP

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

My Internet Connection is: Select **L2TP (Username/Password)** from the drop-down menu.

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

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

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

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

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

Username: Enter your L2TP username.

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

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

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

The screenshot shows the D-Link DIR-860L router's configuration interface. The main heading is "WAN". Below it, there is a note about connection types and a "Note" regarding PPPoE. The "My Internet Connection is" dropdown menu is set to "L2TP (Username / Password)". The "L2TP INTERNET CONNECTION TYPE" section is active, showing fields for "Address Mode" (Dynamic IP selected), "L2TP IP Address", "L2TP Subnet Mask", "L2TP Gateway IP Address", "L2TP Server IP Address", "Username", "Password", "Verify Password", "Reconnect Mode" (On demand selected), "Maximum Idle Time" (5 minutes), "Primary DNS Server", "Secondary DNS Server", "MTU" (1400), and "MAC Address". There are "Save Settings" and "Don't Save Settings" buttons at the bottom of the form.

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

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

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

Internet Setup

DS-Lite

DS-Lite is an IPv6 connection type. After selecting DS-Lite, the following parameters will be available for configuration:

My Internet Connection is: Select **DS-Lite** from the drop-down menu.

DS-Lite Configuration: Select the **DS-Lite DHCPv6 Option** to let the router allocate the AFTR IPv6 address automatically. Select the **Manual Configuration** option to enter the AFTR IPv6 address in manually.

AFTR IPv6 Address: After selecting the **Manual Configuration** option above, enter the AFTR IPv6 address used here.

B4 IPv4 Address: Enter the B4 IPv4 address value used here. (Optional.)

WAN IPv6 Address: Once connected, the WAN IPv6 address will be displayed here.

IPv6 WAN Default Gateway Once connected, the IPv6 WAN Default Gateway address will be displayed here.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYLINK SETTINGS. The main content area is titled 'WAN' and contains the following configuration options:

- INTERNET CONNECTION TYPE:** Choose the mode to be used by the router to connect to the Internet. My Internet Connection is:
- AFTR ADDRESS INTERNET CONNECTION TYPE:** Enter the AFTR address information provided by your Internet Service Provider (ISP).
 - DS-Lite Configuration: DS-Lite DHCPv6 Option Manual Configuration
 - AFTR IPv6 Address:
 - B4 IPv4 Address: 192.0.0. (optional)
 - WAN IPv6 Address:
 - IPv6 WAN Default Gateway:

Buttons for 'Save Settings' and 'Don't Save Settings' are located at the bottom of the configuration section. A 'Helpful Hints...' sidebar on the right provides additional information and support links.

Internet Connection Setup Wizard

If you did not initially choose to install your router with the *Quick Setup Wizard*, you can click on **Internet Connection Setup Wizard** from the **Setup > Internet** screen.

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 **Next** to continue.

INTERNET CONNECTION

If you are configuring the device for the first time, we recommend that you click on the Internet Connection Setup Wizard, and follow the instructions on the screen. If you wish to modify or configure the device settings manually, click the Manual Internet Connection Setup.

INTERNET CONNECTION SETUP WIZARD

If you would like to utilize our easy to use Web-based Wizard to assist you in connecting your new D-Link Systems Router to the Internet, click on the button below.

[Internet Connection Setup Wizard](#)

Note: Before launching the wizard, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

MANUAL INTERNET CONNECTION OPTION

If you would like to configure the Internet settings of your new D-Link Router manually, then click on the button below.

[Manual Internet Connection Setup](#)

WELCOME TO THE D-LINK INTERNET CONNECTION SETUP WIZARD

This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

- Step 1: Set your Password
- Step 2: Select your Time Zone
- Step 3: Configure your Internet Connection
- Step 4: Save Settings and Connect

[Prev](#)

[Next](#)

[Cancel](#)

[Connect](#)

In order to secure your router, enter a new password. Click **Next** to continue.

STEP 1: SET YOUR PASSWORD

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

Password :

Verify Password :

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

STEP 2: SELECT YOUR TIME ZONE

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

Time Zone :

Select your Internet connection type. You can select **DHCP Connection (Dynamic IP Address)** if your Internet connection automatically provides you with an IP Address. This option is commonly used for cable modem services. Click **Next** to continue.

STEP 3: CONFIGURE YOUR INTERNET CONNECTION

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

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

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

If you selected **DHCP Connection (Dynamic IP Address)** you can click on **Clone Your PC's MAC Address** to copy your computer's MAC address to your router. Click **Next** to continue.

DHCP CONNECTION (DYNAMIC IP ADDRESS)

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

MAC Address : (optional)

Host Name :

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

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address : (optional)

If you selected **PPPoE**, enter your PPPoE username and password and 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.

SET USERNAME AND PASSWORD CONNECTION (PPPOE)

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

User Name :

Password :

If you selected **PPTP**, enter your PPTP username, password, and other information supplied by your ISP. Click **Next** to continue.

SET USERNAME AND PASSWORD CONNECTION (PPTP)

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

Address Mode : Dynamic IP Static IP

PPTP IP Address :

PPTP Subnet Mask :

PPTP Gateway IP Address :

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

User Name :

Password :

Verify Password :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address : (optional)

If you selected **L2TP**, enter your L2TP username, password, and other information supplied by your ISP. Click **Next** to continue.

SET USERNAME AND PASSWORD CONNECTION (L2TP)

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

Address Mode : Dynamic IP Static IP

L2TP IP Address :

L2TP Subnet Mask :

L2TP Gateway IP Address :

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

User Name :

Password :

Verify Password :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address : (optional)

If you selected **Static**, enter the IP and DNS settings supplied by your ISP. Click **Next** to continue.

SET STATIC IP ADDRESS CONNECTION

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

IP Address :

Subnet Mask :

Default Gateway :

DNS SETTINGS

Primary DNS Address :

Secondary DNS Address : (optional)

When the setup process is completed, you will see this screen. Click on **Connect** to save your settings.

SETUP COMPLETE!

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

Wireless Settings

If you want to configure the wireless settings on your router using the wizard, click **Wireless Connection Setup Wizard** and refer to the next page.

Click **Add Wireless Device with WPS** if you want to add a wireless device using Wi-Fi Protected Setup (WPS) and refer to page 44.

If you want to manually configure the wireless settings on your router click **Manual Wireless Connection Setup** and refer to page 46.

D-Link

DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET
WIRELESS SETTINGS
NETWORK SETTINGS
STORAGE
MEDIA SERVER
IPV6
MYDLINK SETTINGS

WIRELESS SETTINGS

The following Web-based wizards are designed to assist you in your wireless network setup and wireless device connection.

Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

WIRELESS NETWORK SETUP WIZARD

This wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

[Wireless Connection Setup Wizard](#)

Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Router.

ADD WIRELESS DEVICE WITH WPS (WI-FI PROTECTED SETUP) WIZARD

This wizard is designed to assist you in connecting your wireless device to your wireless router. It will guide you through step-by-step instructions on how to get your wireless device connected. Click the button below to begin.

[Add Wireless Device with WPS](#)

MANUAL WIRELESS NETWORK SETUP

If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new D-Link Systems Router manually, then click on the Manual Wireless Network Setup button below.

[Manual Wireless Connection Setup](#)

Helpful Hints...

- If you already have a wireless network setup with Wi-Fi Protected Setup, click on **Add Wireless Device with WPS** to add new device to your wireless network.
- If you are new to wireless networking and have never configured a wireless router before, click on **Wireless Connection Setup Wizard** and the router will guide you through a few simple steps to get your wireless network up and running.
- If you consider yourself an advanced user and have configured a wireless router before, click **Manual Wireless Connection Setup** to input all the settings manually.
- [More...](#)

WIRELESS

Wireless Connection Setup Wizard

To run the security wizard, click on **Setup > Wireless Settings**. Click the **Wireless Connection Setup Wizard** button.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings categories, with 'WIRELESS SETTINGS' selected. The main content area is titled 'WIRELESS SETTINGS' and contains three wizard options:

- WIRELESS NETWORK SETUP WIZARD**: This wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure. A button labeled 'Wireless Connection Setup Wizard' is present.
- ADD WIRELESS DEVICE WITH WPS (WI-FI PROTECTED SETUP) WIZARD**: This wizard is designed to assist you in connecting your wireless device to your wireless router. It will guide you through step-by-step instructions on how to get your wireless device connected. A button labeled 'Add Wireless Device with WPS' is present.
- MANUAL WIRELESS NETWORK SETUP**: If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new D-Link Systems Router manually, then click on the Manual Wireless Network Setup button below. A button labeled 'Manual Wireless Connection Setup' is present.

A 'Helpful Hints...' sidebar on the right provides additional guidance:

- If you already have a wireless network setup with Wi-Fi Protected Setup, click on **Add Wireless Device with WPS** to add new device to your wireless network.
- If you are new to wireless networking and have never configured a wireless router before, click on **Wireless Connection Setup Wizard** and the router will guide you through a few simple steps to get your wireless network up and running.
- If you consider yourself an advanced user and have configured a wireless router before, click **Manual Wireless Connection Setup** to input all the settings manually.
- [More...](#)

Enter a name for your wireless network (SSID), one for the 2.4GHz frequency and another for the 5GHz frequency. Do not use personal information as your SSID since users with wireless devices within range of your router will be able to see this information.

Then select one of the following options:

Automatically: Select this option to automatically generate the router's network key and click **Next**.

Manually: Select this option to manually enter your network key and click **Next**.

The screenshot shows the 'STEP 1: WELCOME TO THE D-LINK WIRELESS SECURITY SETUP WIZARD' screen. It prompts the user to 'Give your network a name, using up to 32 characters.' and shows two input fields for 'Network Name (SSID) 2.4GHz' and 'Network Name (SSID) 5GHz'. Below the fields are two radio button options:

- Automatically assign a network key (Recommended)**
To prevent outsiders from accessing your network, the router will automatically assign a security (also called WEP or WPA key) to your network.
- Manually assign a network key**
Use this options if you prefer to create our own key.

Note: All D-Link wireless adapters currently support WPA.

Buttons: **Prev**, **Next**, **Cancel**, **Save**

If you selected **Automatically**, the summary window will display your settings. Write down the security key and enter this on your wireless clients. Click **Save** to save your settings.

SETUP COMPLETE!

Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.

<p>Wireless Band : 2.4GHz Band</p> <p>Wireless Network Name (SSID) : dlink-BBF8</p> <p>Security Mode : Auto (WPA or WPA2) - Personal</p> <p>Cipher Type : TKIP and AES</p> <p>Pre-Shared Key : 53f09b05b4</p>
<p>Wireless Band : 5GHz Band</p> <p>Wireless Network Name (SSID) : dlink-5GHz-BBFA</p> <p>Security Mode : Auto (WPA or WPA2) - Personal</p> <p>Cipher Type : TKIP and AES</p> <p>Pre-Shared Key : 53f09b05b4</p>

Prev Next Cancel Save

If you selected **Manually**, the following screen will appear.

Create a passphrase for your *Wireless Security Password*. Click **Next** to continue.

Note: *The security password/passphrase must be between 8 and 63 characters and is case-sensitive. You will need to enter this passphrase on your wireless clients exactly or it will not connect.*

STEP 2: SET YOUR WIRELESS SECURITY PASSWORD

You have selected your security level - you will need to set a wireless security password.

The WPA (Wi-Fi Protected Access) key must meet one of following guidelines:

- Between 8 and 63 characters (A longer WPA key is more secure than a short one)
- Exactly 64 characters using 0-9 and A-F

Use the same Wireless Security Password on both 2.4GHz and 5GHz band

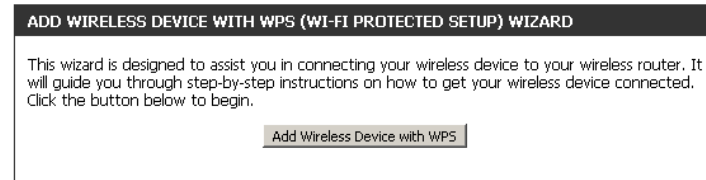
Wireless Security Password :

Note: You will need to enter the same password as keys in this step into your wireless clients in order to enable proper wireless communication.

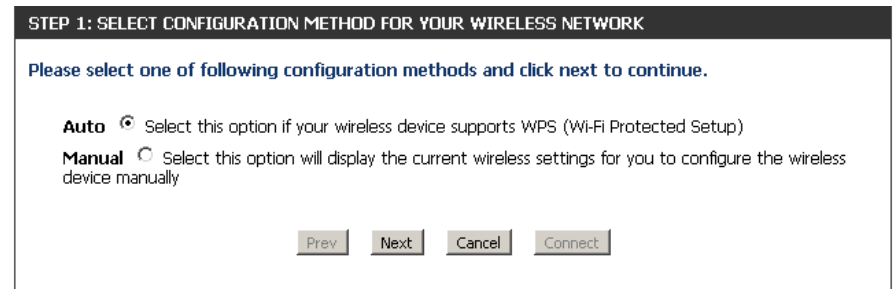
Prev Next Cancel Save

Add Wireless Device with WPS Wizard

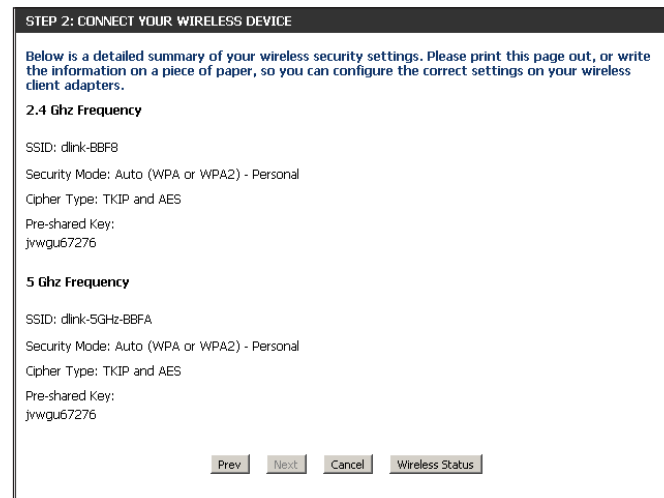
From the **Setup > Wireless Settings** screen, click **Add Wireless Device with WPS**.



Select **Auto** to add a wireless client using WPS (Wi-Fi Protected Setup) and then click **Next**. Skip to the next page.



If you select **Manual**, a settings summary screen will appear. Write down the security key and enter this on your wireless clients. Click **Wireless Status** to finish. This will take you to the *Wireless Status* screen.

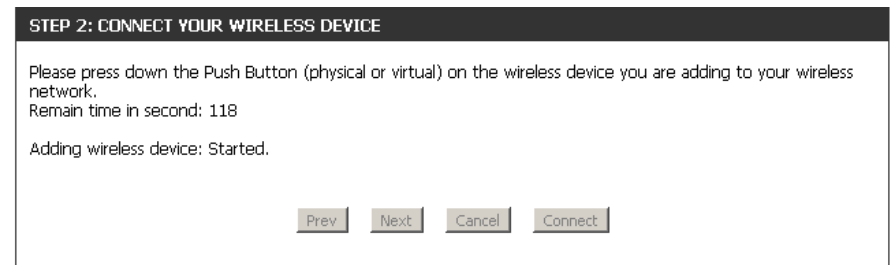
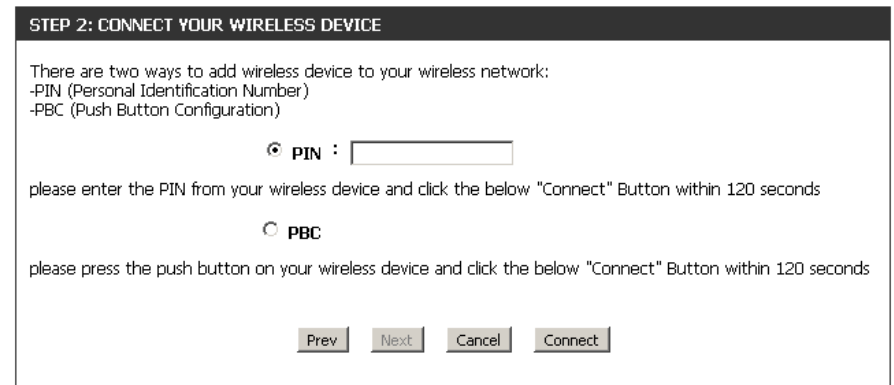


PIN: Select this option to use PIN method. In order to use this method you must know the wireless client's 8 digit PIN and click **Connect**.

PBC: Select this option to use PBC (Push Button) method to add a wireless client. Click **Connect**.

Once you click **Connect**, you will have a 120 second time limit to apply the settings to your wireless client(s) and successfully establish a connection.

Click **Wireless Status** to finish. This will take you to *Wireless Status* screen.



Manual Wireless Settings

802.11n/g (2.4GHz)

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

Schedule: Select the time frame that you would like your wireless network enabled. The schedule may be set to **Always**. Any schedule you create will be available in the drop-down menu. Click **New Schedule** to create a schedule.

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

802.11 Mode: Select one of the following:

- 802.11b Only** - Select only if all of your wireless clients are 802.11b.
- 802.11g Only** - Select only if all of your wireless clients are 802.11g.
- 802.11n Only** - Select only if all of your wireless clients are 802.11n.
- Mixed 802.11g and 802.11b** - Select if you are using both 802.11g and 802.11b wireless clients.
- Mixed 802.11n and 802.11g** - Select if you are using both 802.11n and 802.11g wireless clients.
- Mixed 802.11n, 11g, and 11b** - Select if you are using a mix of 802.11n, 802.11g, and 802.11b wireless clients.

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DIR-860L to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DIR-860L. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you check **Enable Auto Channel Scan**, this option will be greyed out.

Channel Width: Select the Channel Width:

- 20/40 MHz(Auto)** - This is the default setting. Select if you are using both 802.11n and non-802.11n wireless devices.
- 20MHz** - Select if you are not using any 802.11n wireless clients.

Visibility Status: Select **Invisible** if you do not want the SSID of your wireless network to be broadcasted by the DIR-860L. If Invisible is selected, the SSID of the DIR-860L will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-860L in order to connect to it.

Wireless Security: Refer to page 48 for more information regarding wireless security.

WIRELESS NETWORK SETTINGS

Wireless Band : 2.4GHz Band

Enable Wireless : Always New Schedule

Wireless Network Name : (Also called the SSID)

802.11 Mode :

Enable Auto Channel Scan :

Wireless Channel :

Transmission Rate : (Mbit/s)

Channel Width :

Visibility Status : Visible Invisible

WIRELESS SECURITY MODE

Security Mode :

802.11ac/n/a (5GHz)

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

Schedule: Select the time frame that you would like your wireless network enabled. The schedule may be set to **Always**. Any schedule you create will be available in the drop-down menu. Click **New Schedule** to create a schedule.

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

802.11 Mode: Select one of the following:
802.11n Only - Select if all of your wireless clients are 802.11n.
802.11ac Only - Select only if all of your wireless clients are 802.11ac.
Mixed 802.11a and 802.11n - Select if you are using both 802.11n and 802.11a wireless clients.
Mixed 802.11ac and 802.11n - Select if you are using both 802.11n and 802.11ac wireless clients.
Mixed 802.11ac, 802.11n and 802.11a - Select if you are using 802.11ac, 802.11n, and 802.11a wireless clients.

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DIR-860L to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DIR-860L. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you check **Enable Auto Channel Scan**, this option will be greyed out.

Channel Width: Select the Channel Width:
20MHz - Select if you are not using any 802.11n wireless clients.
20/40MHz(Auto) - This is the default setting. Select if you are using both 802.11n and non-802.11n wireless devices.
20/40/80MHz(Auto) - Select if you are using 802.11ac, 802.11n and non-802.11n wireless devices. This option is only available when the 802.11 Mode is set to Mixed 802.11ac.

Visibility Status: Select **Invisible** if you do not want the SSID of your wireless network to be broadcasted by the DIR-860L. If Invisible is selected, the SSID of the DIR-860L will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-860L in order to connect to it.

Wireless Security: Refer to page 48 for more information regarding wireless security.

WIRELESS NETWORK SETTINGS

Wireless Band : 5GHz Band

Enable Wireless : Always New Schedule

Wireless Network Name : (Also called the SSID)

802.11 Mode : Mixed 802.11ac, 802.11n and 802.11a

Enable Auto Channel Scan :

Wireless Channel : 5.180 GHz - CH 36

Transmission Rate : Best (automatic) (Mbit/s)

Channel Width : 20/40/80 MHz(Auto)

Visibility Status : Visible Invisible

WIRELESS SECURITY MODE

Security Mode : WPA-Personal

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-860L 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.

WPA/WPA2-Personal (PSK)

It is recommended to enable wireless security on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **WPA-Personal**.
3. Next to *WPA Mode*, select **Auto(WPA or WPA2), WPA2 Only, or WPA Only**. Use **Auto** if you have wireless clients using both WPA and WPA2.
4. Next to *Cypher Type*, select **TKIP and AES, TKIP, or AES**.
5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed (3600 is default).
6. Next to *Pre-Shared Key*, enter a key (passphrase). The key is entered as a pass-phrase in ASCII format at both ends of the wireless connection. The pass-phrase must be between 8-63 characters.
7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the router.

WIRELESS SECURITY MODE	
Security Mode :	<input type="text" value="WPA-Personal"/>
WPA	
<p>Use WPA or WPA2 mode to achieve a balance of strong security and best compatibility. This mode uses WPA for legacy clients while maintaining higher security with stations that are WPA2 capable. Also the strongest cipher that the client supports will be used. For best security, use WPA2 Only mode. This mode uses AES(CCMP) cipher and legacy stations are not allowed access with WPA security. For maximum compatibility, use WPA Only. This mode uses TKIP cipher. Some gaming and legacy devices work only in this mode.</p> <p>To achieve better wireless performance use WPA2 Only security mode (or in other words AES cipher).</p>	
WPA Mode :	<input type="text" value="Auto(WPA or WPA2)"/>
Cipher Type :	<input type="text" value="TKIP and AES"/>
Group Key Update Interval :	<input type="text" value="3600"/> (seconds)
PRE-SHARED KEY	
<p>Enter an 8- to 63-character alphanumeric pass-phrase. For good security it should be of ample length and should not be a commonly known phrase.</p>	
Pre-Shared Key :	<input type="text" value="jabt09121"/>

Configure WPA/WPA2-Enterprise (RADIUS)

It is recommended to enable wireless security on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **WPA-Enterprise**.
3. Next to *WPA Mode*, select **Auto(WPA or WPA2)**, **WPA2 Only**, or **WPA Only**. Use **Auto** if you have wireless clients using both WPA and WPA2.
4. Next to *Cypher Type*, select **TKIP and AES**, **TKIP**, or **AES**.
5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed (3600 is default).
6. Next to *RADIUS Server IP Address* enter the IP Address of your RADIUS server.

WIRELESS SECURITY MODE

Security Mode :

WPA

Use **WPA** or **WPA2** mode to achieve a balance of strong security and best compatibility. This mode uses WPA for legacy clients while maintaining higher security with stations that are WPA2 capable. Also the strongest cipher that the client supports will be used. For best security, use **WPA2 Only** mode. This mode uses AES(CCMP) cipher and legacy stations are not allowed access with WPA security. For maximum compatibility, use **WPA Only**. This mode uses TKIP cipher. Some gaming and legacy devices work only in this mode.

To achieve better wireless performance use **WPA2 Only** security mode (or in other words AES cipher).

WPA Mode :

Cipher Type :

Group Key Update Interval : (seconds)

EAP (802.1X)

When WPA enterprise is enabled, the router uses EAP (802.1x) to authenticate clients via a remote RADIUS server.

RADIUS server IP Address :

RADIUS server Port :

RADIUS server Shared Secret :

7. Next to *RADIUS Server Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
8. Next to *RADIUS Server Shared Secret*, enter the security key.
9. Click **Advanced** to enter settings for a secondary RADIUS Server.
10. Click **Save Settings** to save your settings.

EAP (802.1X)

When WPA enterprise is enabled, the router uses EAP (802.1x) to authenticate clients via a remote RADIUS server.

RADIUS server IP Address :

RADIUS server Port :

RADIUS server Shared Secret :

<< Advanced

Optional backup RADIUS server

Second RADIUS server IP Address :

Second RADIUS server Port :

Second RADIUS server Shared Secret :

Save Settings Don't Save Settings

Network Settings

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

Router Settings

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

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

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

Host Name: Enter a name for the router.

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

Enable DNS Relay: Uncheck the box to transfer the DNS server information from your ISP to your computers. If checked, your computers will use the router for a DNS server.

DIR-860L //	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
INTERNET	NETWORK SETTINGS				Helpful Hints... <ul style="list-style-type: none"> • If you already have a DHCP server on your network or are using static IP addresses on all the devices on your network, uncheck Enable DHCP Server to disable this feature. • If you have devices on your network that should always have fixed IP addresses, add a DHCP Reservation for each such device. • More...
WIRELESS SETTINGS	Use this section to configure the internal network settings of your router and also to configure the built-in DHCP server to assign IP addresses to computers on your network. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address in this section, you may need to adjust your PC's network settings to access the network again. <p>Please note that this section is optional and you do not need to change any of the settings here to get your network up and running.</p> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
NETWORK SETTINGS	ROUTER SETTINGS				
STORAGE	Use this section to configure the internal network settings of your router. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address here, you may need to adjust your PC's network settings to access the network again. <p> Router IP Address : <input type="text" value="192.168.0.1"/> Default Subnet Mask : <input type="text" value="255.255.255.0"/> Host Name : <input type="text" value="dlinkrouter"/> Local Domain Name : <input type="text"/> (optional) Enable DNS Relay : <input checked="" type="checkbox"/> </p>				
MEDIA SERVER					
IPv6					
MYDLINK SETTINGS					

DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-860L has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DIR-860L. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

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

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

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

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

Always Broadcast: Enable this feature to broadcast your DHCP server to LAN/WLAN clients.

NetBIOS Announcement: NetBIOS allows LAN hosts to discover all other computers within the network, enable this feature to allow the DHCP Server to offer NetBIOS configuration settings.

Learn NetBIOS from WAN: Enable this feature to allow WINS information to be learned from the WAN side, disable to allow manual configuration.

NetBIOS Scope: This feature allows the configuration of a NetBIOS 'domain' name under which network hosts operates. This setting has no effect if the 'Learn NetBIOS information from WAN' is activated.

DHCP SERVER SETTINGS

Use this section to configure the built-in DHCP server to assign IP address to the computers on your network.

Enable DHCP Server :

DHCP IP Address Range : to (addresses within the LAN subnet)

DHCP Lease Time : (minutes)

Always broadcast : (compatibility for some DHCP Clients)

NetBIOS announcement :

Learn NetBIOS from WAN :

NetBIOS Scope : (optional)

NetBIOS node type :

- Broadcast only (use when no WINS servers configured)
- Point-to-Point (no broadcast)
- Mixed-mode (Broadcast then Point-to-Point)
- Hybrid (Point-to-Point then Broadcast)

Primary WINS IP Address :

Secondary WINS IP Address :

NetBIOS Node Type: Select the different type of NetBIOS node; **Broadcast only, Point-to-Point, Mixed-mode,** and **Hybrid.**

WINS IP Address: Enter your WINS Server IP address(es).

DHCP Reservation

If you want a computer or device to always have the same IP address assigned, you can create a DHCP reservation. The router will assign the IP address only to that computer or device.

Note: This IP address must be within the DHCP IP Address Range.

Enable: Check this box to enable the reservation.

Computer Name: Enter the computer name or select from the drop-down menu and click <<.

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.

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

Add/Update: Click **Add/Update** to save your entry. You must click **Save Settings** at the top to activate your reservations.

DHCP Reservations List

DHCP Reservations List: Displays any reservation entries. Displays the host name (name of your computer or device), MAC Address, and IP address.

Enable: Check to enable the reservation.

Edit: Click the edit icon to make changes to the reservation entry.

Delete: Click the trash icon to remove the reservation from the list.

ADD DHCP RESERVATION

Enable :

Computer Name : << Computer Name ▾

IP Address :

MAC Address :

DHCP RESERVATIONS LIST

Enable	Host Name	IP Address	MAC Address		
<input type="checkbox"/>	Graphicstest	192.168.0.105	00:15:e9:2e:26:3c		

NUMBER OF DYNAMIC DHCP CLIENTS

Host Name	IP Address	MAC Address	Expired Time
Graphicstest	192.168.0.105	00:15:e9:2e:26:3c	6 Days 2 Hours 52 Minutes

DHCP RESERVATIONS LIST

Enable	Host Name	IP Address	MAC Address		
<input checked="" type="checkbox"/>	Graphicstest	192.168.0.105	00:15:e9:2e:26:3c		

NUMBER OF DYNAMIC DHCP CLIENTS

Host Name	IP Address	MAC Address	Expired Time
Graphicstest	192.168.0.105	00:15:e9:2e:26:3c	6 Days 2 Hours 52 Minutes

Storage

This page will allow you to access files from a USB external hard drive or thumb drive that is plugged into the router from your local network or from the Internet using either a web browser or an app for your smartphone or tablet. You can create users to be allowed to access these files.

Enable SharePort Web Access: Check to enable sharing files on your USB storage device that is plugged in your router.

HTTP Access Port: Enter a port (8181 is default). You will have to enter this port in the URL when connecting to the shared files. For example: (**http://192.168.0.1:8181**).

HTTPS Access Port: Enter a port (4433 is default). You will have to enter this port in the URL when connecting to the shared files. For example: (**https://192.168.0.1:4433**).

Allow Remote Access: Check this option the allow remote access to this router.

User Name: To create a new user, enter a user name.

Password: Enter a password for this account.

Verify Password: Re-enter the password. Click **Add/Edit** to create the user.

User List: Displays the accounts. The Admin and Guest accounts are built-in to the router.

Number of Devices: Displays the USB device plugged into the router.

The screenshot shows the D-Link DIR-860L Storage configuration page. The page is divided into several sections:

- STORAGE:** Contains a description of Web File Access and buttons for 'Save Settings' and 'Don't Save Settings'.
- SHAREPORT WEB ACCESS:** Includes a checkbox for 'Enable SharePort Web Access' (checked), input fields for 'HTTP Access Port' (8181) and 'HTTPS Access Port' (4433), and a checkbox for 'Allow Remote Access' (unchecked).
- 10 -- USER CREATION:** Includes input fields for 'User Name', 'Password', and 'Verify Password', along with a dropdown menu for 'User Name' and an 'Add/Edit' button.
- USER LIST:** A table showing the current user list:

No.	User Name	Access Path	Permission	Edit	Delete
1	admin	/	Read/Write		

- NUMBER DEVICES:0:** A section showing the number of devices plugged in (0).
- SHAREPORT ACCESS LINK:** A section providing a link to access the storage and buttons for 'Save Settings' and 'Don't Save Settings'.

The page also features a 'Helpful Hints...' section on the right side, which provides additional information about the storage page.

Access Files from the Internet

Below are step-by-step instructions on how to access files that are on your USB thumb drive or external hard drive that is connected to your router:

Step 1 - Enable SharePort Web Access

Check the **Enable SharePort Web Access** checkbox to enable. Then enter the port(s) for HTTP or HTTPS (secure). The default for HTTP is 8181 and HTTPS is 4433.

Step 2 - Create a User Account

Under *User Creation*, enter a username and password, and then click **Add/Edit**.

Step 3 - Configure your Access Path

Under *User List*, click the **Modify** icon for the user you just created. Here you can browse to the folder on your USB storage device you want to assign the Access Path to.

Step 4 - Save Settings

If you want to add more users, repeat steps 2 and 3. Once you are finished, click the **Save Settings** button at the top to save your settings.

Note that under the HTTP Storage Link (at the bottom) will display the URL(s) you can use to connect. Also if you selected HTTPS, you must type in **HTTPS://** instead of **HTTP://** to get a secure connection.

For example, if you selected HTTPS and changed the port to 3200, and your WAN IP address is 1.2.3.4, then you would enter **HTTPS://1.2.3.4:3200** to connect.

10 -- USER CREATION

User Name : << User Name ▾

Password :

Verify Password :

USER LIST

📄 : Modify 🗑️ : Delete

No.	User Name	Access Path	Permission
1	admin	/	Read/Write
2	guest	None	Read Only 📄
3	d-link	(1) /Storage(B0)/	Read/Write 📄 🗑️

NUMBER OF DEVICES : 1

Device	Total Space	Free Space
Storage(B0)	15.04 GB	14.65 GB

Media Server

This feature allows you to share music, pictures, and videos with any devices connected to your network. The iTunes Server allows iTunes software to automatically detect and play music from the router.

Enable DLNA Server: Click on this button to enable the *DLNA Server* feature.

DLNA Server Name: Enter the DLNA server's name.

Folder: Uncheck the checkbox for **root** to select a folder on your thumb drive. Click on the **Browse** button.

Enable iTunes Server: Click on this button to enable the *iTunes Server* feature.

Folder: Uncheck the checkbox for **root** to select a folder on your thumb drive. Click on the **Browse** button.

USB 3.0: Click **Disable** if you want to disable the USB port.

The screenshot displays the D-Link DIR-860L configuration interface for the Media Server. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYDLINK SETTINGS. The main content area is titled 'MEDIA SERVER' and contains the following sections:

- MEDIA SERVER:** A descriptive paragraph about DLNA (Digital Living Network Alliance) and a note stating that shared media may not be secure and is recommended only on secure networks. Below this are 'Save Settings' and 'Don't Save Settings' buttons.
- DLNA SERVER:** Includes a radio button to 'Enable' the DLNA Server (selected), a text field for 'DLNA Server Name' containing 'DIR-860L', a checkbox for 'Folder' set to 'root' (unchecked), and a 'Browse' button.
- ITUNES SERVER:** Includes a radio button to 'Enable' the iTunes Server (selected), a checkbox for 'Folder' set to 'root' (unchecked), and a 'Browse' button.
- USB 3.0:** Includes a radio button to 'Disable' the USB 3.0 port (selected), and 'Save Settings' and 'Don't Save Settings' buttons.

On the right side, there is a 'Helpful Hints...' section with a bullet point: 'After adding new media content to the router, click the Enable or Disable button and then save settings.' and a 'More...' link.

IPv6

On this page, the user can configure the IPv6 Connection type. There are three ways to set up the IPv6 Internet connection.

For the beginner user that has not configured a router before, click on the **IPv6 Internet Connection Setup Wizard** button and the router will guide you through a few simple steps to get your network up and running. (Refer to page 61.)

For the advanced user that has configured a router before, click on the **Manual IPv6 Internet Connection Setup** button to input all the settings manually. (Refer to page 66.)

If you would like to manually configure the IPv6 local connectivity settings of your router, click on **IPv6 Local Connectivity Settings**.

The screenshot displays the D-Link DIR-860L web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various settings categories: INTERNET, WIRELESS SETTINGS, NETWORK SETTINGS, STORAGE, MEDIA SERVER, IPV6, and MYDLINK SETTINGS. The main content area is titled 'IPv6 INTERNET CONNECTION' and provides instructions on how to set up an IPv6 Internet connection. It offers three options: using the Web-based IPv6 Internet Connection Setup Wizard, manually configuring the connection, or using the Manual IPv6 Internet Connection Setup. A 'Helpful Hints...' section on the right provides additional guidance for new and advanced users. The bottom of the page features a 'WIRELESS' section.

Click on **Enable ULA**. You can check **Use default ULA prefix**, or you can leave the box unchecked and enter the prefix manually in the **ULA Prefix** text box.

Click **Save Settings**.

IPv6 LOCAL CONNECTIVITY SETTINGS

Use this section to configure Unique Local IPv6 Unicast Address (ULA) settings for your router. ULA is intended for local communications and not expected to be routable on the global Internet.

IPv6 ULA SETTINGS

Enable ULA :

Use default ULA prefix :

ULA Prefix : /64

CURRENT IPv6 ULA SETTINGS

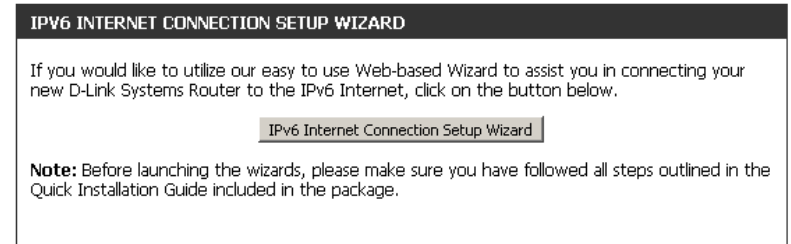
Current ULA Prefix : /64

LAN IPv6 ULA : /64

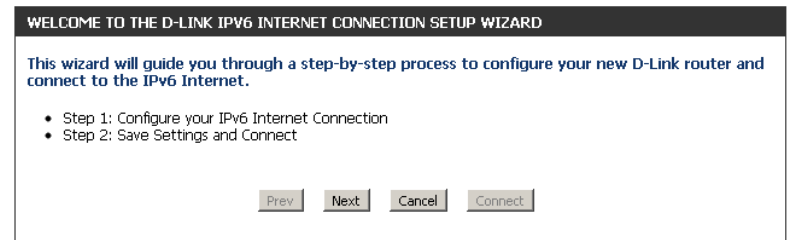
IPv6 Internet Connection Setup Wizard

On this page, the user can configure the IPv6 Connection type using the IPv6 Internet Connection Setup Wizard.

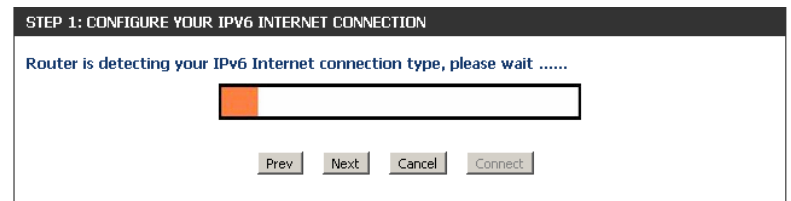
Click the **IPv6 Internet Connection Setup Wizard** button and the router will guide you through a few simple steps to get your network up and running.



Click **Next** to continue to the next page. Click **Cancel** to discard the changes made and return to the main page.



The router will try to detect whether its possible to obtain the IPv6 Internet connection type automatically. If this succeeds then the user will be guided through the input of the appropriate parameters for the connection type found.

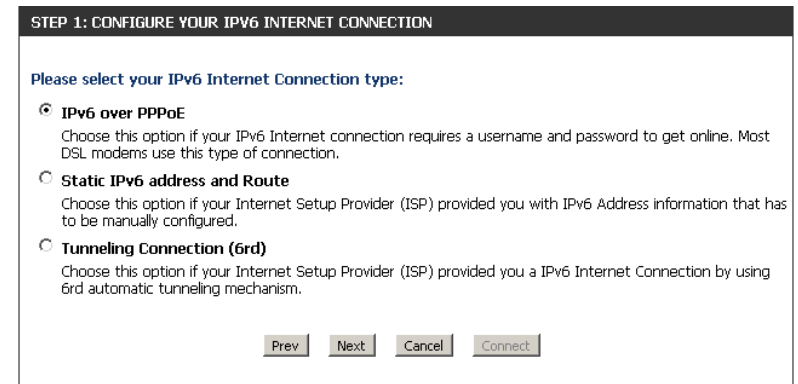


However, if the automatic detection fails, the user will be prompt to either **Try again** or to click on the **Guide me through the IPv6 settings** button to initiate the manual continual of the wizard.

There are several connection types to choose from. If you are unsure of your connection method, please contact your IPv6 Internet Service Provider.

Note: If using the PPPoE option, you will need to ensure that any PPPoE client software on your computers has been removed or disabled. The three options available on this page are **IPv6 over PPPoE**, **Static IPv6 address and Route**, and **Tunneling Connection (6rd)**.

Choose the required IPv6 Internet Connection type and click on the **Next** button to continue. Click on the **Prev** button to return to the previous page. Click on the **Cancel** button to discard all the changes made and return to the main page.



IPv6 over PPPoE

After selecting the IPv6 over PPPoE option, the user will be able to configure the IPv6 Internet connection that requires a username and password to get online. Most DSL modems use this type of connection.

The following parameters will be available for configuration:

PPPoE Session: Select the PPPoE Session value used here. This option will state that this connection shares it's information with the already configured IPv6 PPPoE connection, or the user can create a new PPPoE connection here.

User Name: Enter the PPPoE username used here. If you do not know your user name, please contact your ISP.

Password: Enter the PPPoE password used here. If you do not know your password, please contact your ISP.

Verify Password: Re-enter the PPPoE password used here.

Service Name: Enter the service name for this connection here. This option is optional.

SET USERNAME AND PASSWORD CONNECTION (PPPOE)

To set up this connection you will need to have a Username and Password from your IPv6 Internet Service Provider. If you do not have this information, please contact your ISP.

PPPoE Session: Share with IPv4 Create a new session

Username :

Password :

Verify Password :

Service Name : (Optional)

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

Static IPv6 Address Connection

This mode is used when your ISP provides you with a set IPv6 addresses that does not change. The IPv6 information is manually entered in your IPv6 configuration settings. You must enter the IPv6 address, Subnet Prefix Length, Default Gateway, Primary DNS Server, and Secondary DNS Server. Your ISP provides you with all this information.

Use Link-Local Address: The Link-local address is used by nodes and routers when communicating with neighboring nodes on the same link. This mode enables IPv6-capable devices to communicate with each other on the LAN side.

IPv6 Address: Enter the WAN IPv6 address for the router here.

Subnet Prefix Length: Enter the WAN subnet prefix length value used here.

Default Gateway: Enter the WAN default gateway IPv6 address used here.

Primary DNS Address: Enter the WAN primary DNS Server address used here.

Secondary DNS Address: Enter the WAN secondary DNS Server address used here.

LAN IPv6 Address: These are the settings of the LAN (Local Area Network) IPv6 interface for the router. The router's LAN IPv6 Address configuration is based on the IPv6 Address and Subnet assigned by your ISP. (A subnet with prefix /64 is supported in LAN.)

SET STATIC IPV6 ADDRESS CONNECTION

To set up this connection you will need to have a complete list of IPv6 information provided by your IPv6 Internet Service Provider. If you have a Static IPv6 connection and do not have this information, please contact your ISP.

Use Link-Local Address :

IPv6 Address :

Subnet Prefix Length :

Default Gateway :

Primary IPv6 DNS Address :

Secondary IPv6 DNS Address :

LAN IPv6 Address : /64

Tunneling Connection (6rd)

After selecting the Tunneling Connection (6rd) option, the user can configure the IPv6 6rd connection settings.

The following parameters will be available for configuration:

6rd IPv6 Prefix: Enter the 6rd IPv6 address and prefix value used here.

IPv4 Address: Enter the IPv4 address used here.

Mask Length: Enter the IPv4 mask length used here.

Assigned IPv6 Prefix: Displays the IPv6 assigned prefix value here.

6rd Border Relay IPv4 Address: Enter the 6rd border relay IPv4 address used here.

IPv6 DNS Server: Enter the primary DNS Server address used here.

The screenshot shows a configuration window titled "SET UP 6RD TUNNELING CONNECTION". Below the title is a message: "To set up this 6rd tunneling connection you will need to have the following information from your IPv6 Internet Service Provider. If you do not have this information, please contact your ISP." The form contains the following fields and labels:

- 6rd IPv6 Prefix :** A text input field followed by a slash and another empty text input field.
- IPv4 Address :** A text input field containing "10.10.10.100" and a label **Mask Length :** followed by an empty text input field.
- Assigned IPv6 Prefix :** A label with no input field.
- 6rd Border Relay IPv4 Address :** A text input field.
- IPv6 DNS Server :** A text input field.

At the bottom of the window are four buttons: "Prev", "Next", "Cancel", and "Connect".

The IPv6 Internet Connection Setup Wizard is complete.

Click on the **Connect** button to save your settings. Click on the **Prev** button to return to the previous page. Click on the **Cancel** button to discard all the changes made and return to the main page.

The screenshot shows a confirmation window titled "SETUP COMPLETE!". Below the title is a message: "The IPv6 Internet Connection Setup Wizard has completed. Click the Connect button to save your settings and reboot the router." At the bottom of the window are four buttons: "Prev", "Next", "Cancel", and "Connect".

IPv6 Manual Setup

There are several connection types to choose from: **Auto Detection**, **Static IPv6**, **Autoconfiguration (SLAAC/DHCPv6)**, **PPPoE**, **IPv6 in IPv4 Tunnel**, **6to4**, **6rd**, and **Local Connectivity Only**. If you are unsure of your connection method, please contact your IPv6 Internet Service Provider.

Note: If using the PPPoE option, you will need to ensure that any PPPoE client software on your computers has been removed or disabled.

Auto Detection

Select **Auto Detection** to have the router detect and automatically configure your IPv6 setting from your ISP.

Click **Save Settings**.

IPv6 CONNECTION TYPE
<p>Choose the mode to be used by the router to connect to the IPv6 Internet.</p> <p>My IPv6 Connection is : <input type="text" value="Auto Detection"/></p>
IPv6 DNS SETTINGS
<p>Obtain DNS server address automatically or enter a specific DNS server address.</p> <p><input checked="" type="radio"/> Obtain IPv6 DNS Servers automatically</p> <p><input type="radio"/> Use the following IPv6 DNS Servers</p> <p>Primary DNS Server : <input type="text"/></p> <p>Secondary DNS Server : <input type="text"/></p>
LAN IPv6 ADDRESS SETTINGS
<p>Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.</p> <p>Enable DHCP-PD : <input checked="" type="checkbox"/></p> <p>LAN IPv6 Address : <input type="text"/> /64</p> <p>LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64</p>
ADDRESS AUTOCONFIGURATION SETTINGS
<p>Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. You can also enable DHCP-PD to delegate prefixes for routers in your LAN.</p> <p>Enable Automatic IPv6 address assignment : <input checked="" type="checkbox"/></p> <p>Enable Automatic DHCP-PD in LAN : <input checked="" type="checkbox"/></p> <p>Autoconfiguration Type : <input type="text" value="SLAAC+Stateless DHCP"/></p> <p>Router Advertisement Lifetime : <input type="text"/> (minutes)</p>
<p><input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/></p>

Static IPv6

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

WAN IPv6 Address Settings: Enter the address settings supplied by your Internet provider (ISP).

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 address assignment: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

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

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

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

Click **Save Settings**.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is :	<input type="text" value="Static IPv6"/>
WAN IPv6 ADDRESS SETTINGS	
Enter the IPv6 address information provided by your Internet Service Provider (ISP).	
Use Link-Local Address :	<input checked="" type="checkbox"/>
IPv6 Address :	<input type="text" value="fe80::cad3:a3ff:fe23:bbfb"/>
Subnet Prefix Length :	<input type="text" value="64"/>
Default Gateway :	<input type="text"/>
Primary DNS Server :	<input type="text"/>
Secondary DNS Server :	<input type="text"/>
LAN IPv6 ADDRESS SETTINGS	
Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.	
LAN IPv6 Address :	<input type="text"/> /64
LAN IPv6 Link-Local Address :	fe80::cad3:a3ff:fe23:bbfb /64
ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Automatic IPv6 address assignment :	<input checked="" type="checkbox"/>
Autoconfiguration Type :	<input type="text" value="SLAAC+Stateless DHCP"/>
Router Advertisement Lifetime :	<input type="text"/> (minutes)
<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>	

Autoconfiguration

My IPv6 Connection is: Select **Autoconfiguration (Stateless/DHCPv6)** from the drop-down menu.

IPv6 DNS Settings: Select either **Obtain DNS server address automatically** or **Use the following DNS Address**.

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

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 address assignment: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

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

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

Router Advertisement Lifetime: Enter the Router Advertisement Lifetime (in minutes).
Click **Save Settings**.

IPv6 CONNECTION TYPE

Choose the mode to be used by the router to connect to the IPv6 Internet.

My IPv6 Connection is : Autoconfiguration(SLAAC/DHCPv6) ▾

IPv6 DNS SETTINGS

Obtain DNS server address automatically or enter a specific DNS server address.

Obtain IPv6 DNS Servers automatically
 Use the following IPv6 DNS Servers

Primary DNS Server :

Secondary DNS Server :

LAN IPv6 ADDRESS SETTINGS

Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.

Enable DHCP-PD :

LAN IPv6 Address : /64

LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64

ADDRESS AUTOCONFIGURATION SETTINGS

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. You can also enable DHCP-PD to delegate prefixes for routers in your LAN.

Enable Automatic IPv6 address assignment :

Enable Automatic DHCP-PD in LAN :

Autoconfiguration Type : SLAAC+Stateless DHCP ▾

Router Advertisement Lifetime : (minutes)

Save Settings
Don't Save Settings

PPPoE

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

PPPoE Internet Connection Type: Enter the PPPoE account settings supplied by your Internet provider (ISP).

PPPoE Session: Select **Create a new session** if you have IPv6.

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

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

User Name: Enter your PPPoE username.

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

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

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

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

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

IPv6 DNS Settings: Select either **Obtain IPv6 DNS servers automatically** or **Use the following IPv6 DNS Servers**

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

IPv6 CONNECTION TYPE

Choose the mode to be used by the router to connect to the IPv6 Internet.

My IPv6 Connection is :

PPPOE INTERNET CONNECTION TYPE :

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

PPPoE Session : Share with IPv4 Create a new session

Address Mode : Dynamic IP Static IP

IP Address :

Username :

Password :

Verify Password :

Service Name : (optional)

Reconnect Mode : Always on On demand Manual

Maximum Idle Time : (minutes, 0=infinite)

MTU : (bytes) MTU default = 1492

IPv6 DNS SETTINGS

Obtain DNS server address automatically or enter a specific DNS server address.

Obtain IPv6 DNS Servers automatically

Use the following IPv6 DNS Servers

Primary DNS Server :

Secondary DNS Server :

LAN IPv6 ADDRESS SETTINGS

Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.

Enable DHCP-PD :

LAN IPv6 Address : /64

LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64

ADDRESS AUTOCONFIGURATION SETTINGS

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. You can also enable DHCP-PD to delegate prefixes for routers in your LAN.

Enable Automatic IPv6 address assignment :

Enable Automatic DHCP-PD in LAN :

Autoconfiguration Type :

Router Advertisement Lifetime : (minutes)

Enable DHCP-PD: Check to enable DHCP-PD.

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 address assignment: Check to enable the IPv6 Autoconfiguration.

Enable Automatic DHCP-PD in LAN: Check to enable delegation of prefixes for router addresses.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

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

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

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

Click **Save Settings**.

LAN IPv6 ADDRESS SETTINGS

Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.

Enable DHCP-PD :

LAN IPv6 Address : /64

LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64

ADDRESS AUTOCONFIGURATION SETTINGS

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network. You can also enable DHCP-PD to delegate prefixes for routers in your LAN.

Enable Automatic IPv6 address assignment :

Enable Automatic DHCP-PD in LAN :

Autoconfiguration Type : SLAAC+Stateless DHCP

Router Advertisement Lifetime : (minutes)

IPv6 in IPv4 Tunneling

My IPv6 Connection is: Select **IPv6 in IPv4 Tunnel** from the drop-down menu.

IPv6 in IPv4 Tunnel

Settings: Enter the settings supplied by your Internet provider (ISP).

IPv6 DNS Settings: Select either **Obtain IPv6 DNS servers automatically** or **Use the following IPv6 DNS Servers**

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

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 Address Assignment: Check to enable the Autoconfiguration feature.

Enable Automatic DHCP-PD in LAN: Check to enable delegation of prefixes for router addresses.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

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

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

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

Click **Save Settings**.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is :	IPv6 in IPv4 Tunnel
IPv6 IN IPv4 TUNNEL SETTINGS	
Enter the IPv6 in IPv4 Tunnel information provided by your Tunnel Broker.	
Remote IPv4 Address :	<input type="text"/>
Remote IPv6 Address :	<input type="text"/>
Local IPv4 Address :	<input type="text"/>
Local IPv6 Address :	<input type="text"/>
Subnet Prefix Length :	<input type="text"/>
IPv6 DNS SETTINGS	
Obtain DNS server address automatically or enter a specific DNS server address.	
<input checked="" type="radio"/> Obtain IPv6 DNS Servers automatically <input type="radio"/> Use the following IPv6 DNS Servers	
Primary DNS Server :	<input type="text"/>
Secondary DNS Server :	<input type="text"/>
LAN IPv6 ADDRESS SETTINGS	
Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.	
Enable DHCP-PD :	<input checked="" type="checkbox"/>
LAN IPv6 Address :	<input type="text"/> /64
LAN IPv6 Link-Local Address :	fe80::cad3:a3ff:fe23:bbf8 /64
ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Automatic IPv6 address assignment :	<input checked="" type="checkbox"/>
Enable Automatic DHCP-PD in LAN :	<input checked="" type="checkbox"/>
Autoconfiguration Type :	SLAAC+Stateless DHCP
Router Advertisement Lifetime :	<input type="text"/> (minutes)
<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>	

6 to 4 Tunneling

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

WAN IPv6 Address Settings: Enter the IPv6 settings supplied by your Internet provider (ISP).

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

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 Address Assignment: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

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

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

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

Click **Save Settings**.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is :	<input type="text" value="6to4"/>
WAN IPv6 ADDRESS SETTINGS	
Enter the IPv6 address information provided by your Internet Service Provider (ISP).	
6to4 Address :	<input type="text"/>
6to4 Relay :	<input type="text"/>
Primary DNS Server :	<input type="text"/>
Secondary DNS Server :	<input type="text"/>
LAN IPv6 ADDRESS SETTINGS	
Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.	
LAN IPv6 Address :	xxxx:xxxx:xxxx: <input type="text"/> ::1 /64
LAN IPv6 Link-Local Address :	fe80::cad3:a3ff:fe23:bbf8 /64
ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Automatic IPv6 address assignment :	<input checked="" type="checkbox"/>
Autoconfiguration Type :	<input type="text" value="SLAAC+Stateless DHCP"/>
Router Advertisement Lifetime :	<input type="text"/> (minutes)
<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>	

6rd

My IPv6 Connection is: Select **6rd** from the drop-down menu.

WAN IPv6 Address Settings: Enter the address settings supplied by your Internet provider (ISP).

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

LAN IPv6 Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Automatic IPv6 address assignment: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful (DHCPv6)**, **SLAAC+RDNSS** or **SLAAC + Stateless DHCPv6**.

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

Click **Save Settings**.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is : <input type="text" value="6rd"/>	
WAN IPv6 ADDRESS SETTINGS	
Enter the IPv6 address information provided by your Internet Service Provider (ISP).	
Enable Hub and Spoke Mode : <input type="checkbox"/>	
6rd Configuration : <input checked="" type="radio"/> 6rd DHCPv4 option <input type="radio"/> Manual Configuration	
6rd IPv6 Prefix : <input type="text"/> / <input type="text"/>	
IPv4 Address : <input type="text"/> Mask Length : <input type="text"/>	
Assigned IPv6 Prefix : <input type="text"/>	
Tunnel Link-Local Address : <input type="text"/>	
6rd Border Relay IPv4 Address : <input type="text"/>	
Primary DNS Server : <input type="text"/>	
Secondary DNS Server : <input type="text"/>	
LAN IPv6 ADDRESS SETTINGS	
Use this section to configure the internal network settings of your router. If you change the LAN IPv6 Address here, you may need to adjust your PC network settings to access the network again.	
LAN IPv6 Address : <input type="text"/>	
LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64	
ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Automatic IPv6 address assignment : <input checked="" type="checkbox"/>	
Autoconfiguration Type : <input type="text" value="SLAAC+Stateless DHCP"/>	
Router Advertisement Lifetime : <input type="text"/> (minutes)	
<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>	

Local Connectivity

My IPv6 Connection is: Select **Local Connectivity Only** from the drop-down menu.

LAN IPv6 Link-Local Address: Displays the IPv6 address of the router.

Click **Save Settings**.

IPv6 CONNECTION TYPE

Choose the mode to be used by the router to connect to the IPv6 Internet.

My IPv6 Connection is :

LAN IPv6 ADDRESS SETTINGS

Use this section to configure the internal network settings of your router.

LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64

mydlink Settings

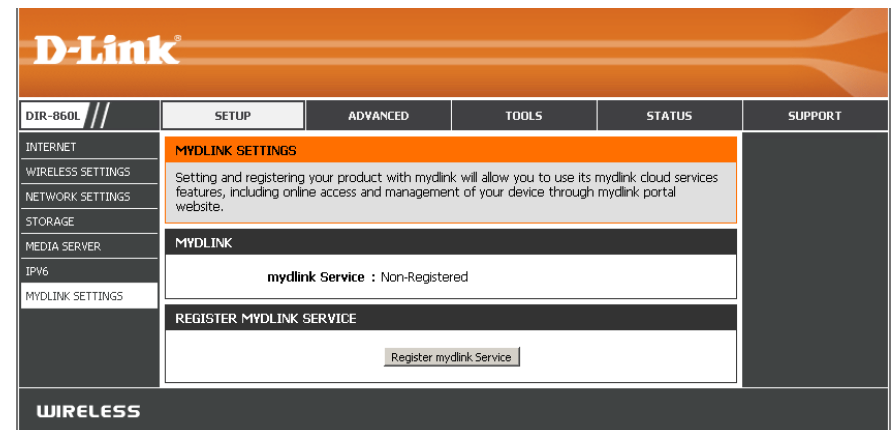
The DIR-860L features a cloud service that pushes information such as firmware upgrade notifications, user activity, and intrusion alerts to the mydlink™ app on Android and Apple mobile devices. To insure that your router is up-to-date with the latest features, mydlink™ will notify you when an update is available for your router. You can also monitor a user's online activity with real-time website browsing history, maintaining a safe and secure environment, especially for children at home.

On this page the user can configure the mydlink™ settings for this router. This feature will allow us to use the mydlink cloud services that includes online access and management of this router through the mydlink portal website or portable device applications like iOS apps and Android applications.

In the mydlink section, we can view the registration status of the mydlink account service. The mydlink Service field will either display Registered or Non-Registered. In the Register mydlink Service section, we can register or modify a mydlink account. Click on the **Register mydlink Service** button to initiate this procedure.

mydlink Service: Displays whether your device is registered with a mydlink account or not. If you are registered, your mydlink e-mail address will be displayed.

Register mydlink Service: Click to go to the mydlink website to register or edit your settings. Please refer to page 19 for the registration steps.



Advanced Virtual Server

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

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

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

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

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

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

Inbound Filter: Select **Allow All** (most common) or a created Inbound filter. You may create your own inbound filters in the **Advanced** > **Inbound Filter** page.

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DIR-860L //

SETUP ADVANCED TOOLS STATUS SUPPORT

VIRTUAL SERVER

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

Save Settings Don't Save Settings

24 - VIRTUAL SERVERS LIST

Remaining number of rules that can be created: 24

	Name	Application	IP Address	Computer Name	Public Port	Private Port	Protocol	Schedule	Inbound Filter
<input type="checkbox"/>		<< Application name		<< Computer Name			Both	Always	Allow All
<input type="checkbox"/>		<< Application name		<< Computer Name			Both	Always	Allow All
<input type="checkbox"/>		<< Application name		<< Computer Name			Both	Always	Allow All
<input type="checkbox"/>		<< Application name		<< Computer Name			Both	Always	Allow All

Helpful Hints...

- Check the **Application Name** drop down menu for a list of predefined server types. If you select one of the predefined server types, click the arrow button next to the drop down menu to fill out the corresponding field.
- You can select a computer from the list of DHCP clients in the **Computer Name** drop down menu, or you can manually enter the IP address of the computer at which you would like to open the specified port.
- Select a schedule for when the virtual server will be enabled. If you do not see the schedule you need in the list of schedules, go to the **Tools** -> **Schedules** screen and create a new schedule.
- Select a filter that restricts the Internet hosts that can access this virtual server to hosts that you trust. If you do not see the filter you

Port Forwarding

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

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

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

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

Example: 24,1009,3000-4000

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

Inbound Filter: Select **Allow All** (most common) or a created Inbound filter. You may create your own inbound filters in the **Advanced > Inbound Filter** page.

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DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING

This option is used to open multiple ports or a range of ports in your router and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in the format, Port Ranges (100-150), Individual Ports (80, 68, 888), or Mixed (1020-5000, 689). This option is only applicable to the INTERNET session.

Save Settings Don't Save Settings

24 -- PORT FORWARDING RULES

Remaining number of rules that can be created: 24

Name	IP Address	Ports to Open	Inbound Filter
<input type="text"/>	<< Application Name	TCP <input type="text"/> Schedule <input type="text"/>	Always
<input type="checkbox"/>	<input type="text"/>	UDP <input type="text"/>	Inbound Filter <input type="text"/>
<input type="checkbox"/>	<< Computer Name	TCP <input type="text"/> Schedule <input type="text"/>	Allow All
<input type="checkbox"/>	<input type="text"/>	UDP <input type="text"/>	Inbound Filter <input type="text"/>
<input type="checkbox"/>	<< Application Name	TCP <input type="text"/> Schedule <input type="text"/>	Always
<input type="checkbox"/>	<input type="text"/>	UDP <input type="text"/>	Inbound Filter <input type="text"/>
<input type="checkbox"/>	<< Computer Name	TCP <input type="text"/> Schedule <input type="text"/>	Allow All
<input type="checkbox"/>	<input type="text"/>	UDP <input type="text"/>	Inbound Filter <input type="text"/>

Helpful Hints...

- Check the **Application Name** drop-down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop-down menu to fill out the appropriate fields.
- You can select your computer from the list of DHCP clients in the **Computer Name** drop-down menu, or enter the IP address manually of the computer you would like to open the specified port to.
- Select a schedule for when the port forwarding will be enabled. If you do not see the schedule you need in the list of schedules, go to the **Tools -> Schedules** screen and create a new schedule.
- You can enter ports in various formats: Range (50-100) Individual (80, 68, 888) Mixed (1020-5000, 689)

Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-860L. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the firewall (public) ports associated with the trigger port to open them for inbound traffic.

The DIR-860L provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

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

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

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

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

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

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

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'APPLICATION RULES' section is active, displaying a table for creating rules. The table has columns for Name, Application, Trigger, Firewall, Traffic Type, and Schedule. Below the table, there are 'Save Settings' and 'Don't Save Settings' buttons. A sidebar on the right contains 'Helpful Hints...' with instructions on how to use the Application Name drop-down menu and select a schedule.

	Name	Application	Trigger	Firewall	Traffic Type	Schedule
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>	<input type="text"/>	<input type="text"/>	All	Always
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>	<input type="text"/>	<input type="text"/>	All	Always
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>	<input type="text"/>	<input type="text"/>	All	Always

QoS Engine

The QoS Engine option helps improve your network gaming performance by prioritizing applications. By default the QoS Engine settings are disabled and application priority is not automatically classified. The QoS section contains a queuing mechanism, traffic shaping and classification. It supports two kinds of queuing mechanisms. Strict Priority Queue (SPQ) and Weighted Fair Queue (WFQ). SPQ will process traffic based on traffic priority. Queue1 has the highest priority and Queue4 has the lowest priority. WFQ will process traffic based on the queue weight. Users can configure each queue's weight. The sum of all the queue's weight must be 100. When surfing the Internet, the system will do traffic shaping based on the uplink and downlink speed. The classification rules can be used to classify traffic to different queues, then SPQ or WFQ will do QoS based on the queue's priority or weight.

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

Uplink Speed: The speed at which data can be transferred from the router to your ISP. This is determined by your ISP.

Downlink Speed: The speed at which data can be transferred from the Internet to your router. This is determined by your ISP.

Queue Type: Select either **Strict Priority Queue** (rank in order) or **Weighted Fair Queue** (percentage).

Queue ID: The queue ID used will be displayed in the first column.

Queue Priority: When *Strict Priority Queue* is selected, the *Queue Priority* will be displayed in the second column.

Queue Weight: When the *Weighted Fair Queue* option is selected, you will be able to manually enter the *Queue Weight* for each individual Queue ID in the second column.

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DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

QoS SETTINGS

Use this section to configure D-Link's QoS Engine powered by QoS Engine Technology. This QoS Engine improves your online gaming experience by ensuring that your game traffic is prioritized over other network traffic, such as FTP or Web. For best performance, use the Automatic Classification option to automatically set the priority for your applications.

Save Settings Don't Save Settings

QoS SETUP

Enable QoS :

Uplink Speed : 2048 kbps << Select Transmission Rate

Downlink Speed : 8192 kbps << Select Transmission Rate

Queue Type : Strict Priority Queue Weighted Fair Queue

Queue ID	Queue Weight
1	10 %
2	10 %
3	10 %
4	10 %

32 -- CLASSIFICATION RULES

Remaining number of rules that can be created: 18

Name	Queue ID	Protocol
Youtube	1 - Highest	TCP << ALL

Local IP Range: to

Remote IP Range: to

Application Port: YOUTUBE << ALL

After specifying the QoS framework used, in the QoS setup section, the user can now create individual rules for scenarios that require the use of traffic control and data priority manipulation.

Classification The QoS Engine supports overlaps between rules, where more than one rule can match for a specific message flow. If more than one **Rules:** rule is found to match the rule with the highest priority will be used.

Name: Create a name for the rule that is meaningful to you.

Queue ID: The priority of the message flow is entered here -- 1 receives the highest priority (most urgent) and 255 receives the lowest priority (least urgent).

Protocol: The protocol used by the messages.

Local IP Range: The rule applies to a flow of messages whose LAN-side IP address falls within the range set here.

Remote IP Range: The rule applies to a flow of messages whose WAN-side IP address falls within the range set here.

Application Port: Select a service or port you want to assign to this rule.

Click on the **Save Settings** button to accept the changes made or click on the **Don't Save Settings** button to discard the changes made.

Network Filters

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

Configure MAC Filtering: Select **Turn MAC Filtering Off, Allow MAC addresses listed below**, or **Deny MAC addresses listed below** from the drop-down menu.

MAC Address: Enter the MAC address you would like to filter.

To find the MAC address on a computer, please refer to the *Networking Basics* section in this manual.

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

Schedule: Select a pre-defined or user created schedule from the drop-down menu, or click **New Schedule** to create a new schedule. You set a specific time frame for the MAC filter rule to be active.

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DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

MAC ADDRESS FILTER

The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/Internet access.

Save Settings Don't Save Settings

24 -- MAC FILTERING RULES

Configure MAC Filtering below:
Turn MAC Filtering OFF

Remaining number of rules that can be created: 24

	MAC Address		DHCP Client List	Schedule
<input type="checkbox"/>		<<	Computer Name	Always New Schedule
<input type="checkbox"/>		<<	Computer Name	Always New Schedule
<input type="checkbox"/>		<<	Computer Name	Always New Schedule
<input type="checkbox"/>		<<	Computer Name	Always New Schedule
<input type="checkbox"/>		<<	Computer Name	Always New Schedule

Helpful Hints...

- Create a list of MAC addresses and choose whether to allow or deny them access to your network.
- Computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu and click the arrow to add that device's MAC to the list.
- Use the check box on the left to either enable or disable a particular entry.
- Use the **Always** drop down menu if you have previously defined a schedule in the router. If not, click on the **New Schedule** button to add one.
- **More...**

Access Control

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

Enable Access Control: Check the **Enable Access Control** box, and then click on **Add Policy** to start the Wizard.

The screenshot shows the D-Link web interface for the DIR-860L. The 'ACCESS CONTROL' section is active, and the 'Enable Access Control' checkbox is checked. Below it, the 'POLICY TABLE' contains one policy named 'test' with the following details:

Enable	Policy	Machine	Filtering	Logged	Schedule
<input checked="" type="checkbox"/>	test	00:15:e9:2e:26:3c	Block Some Access	Yes	Always

Helpful Hints...:

- Check **Enable Access Control** if you want to enforce rules that limit Internet access from specific LAN computers.
- Click **Add Policy** to start the processes of creating a rule. You can cancel the process at any time. When you are finished creating a rule it will be added to the **Policy Table** below.
- Click the **Edit** icon to modify an existing rule using the Policy Wizard.
- Click the **Delete** icon to permanently remove a rule.
- **More...**

Access Control Wizard

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

ADD NEW POLICY

This wizard will guide you through the following steps to add a new policy for Access Control.

- Step 1 - Choose a unique name for your policy
- Step 2 - Select a schedule
- Step 3 - Select the machine to which this policy applies
- Step 4 - Select filtering method
- Step 5 - Select filters
- Step 6 - Configure Web Access Logging

Buttons: **Prev** **Next** **Save** **Cancel**

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

STEP 1: CHOOSE POLICY NAME

Choose a unique name for your policy.

Policy Name :

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

STEP 2: SELECT SCHEDULE

Choose a schedule to apply to this policy.

Details :

Enter the following information:

- **Address Type** - Select **IP**, **MAC**, or **Other Machines**.
- **IP Address** - Enter the IP address of the computer you want to apply the rule to.
- **Machine Address** - Enter the PC MAC address or click on **Clone Your PC's MAC Address**.

STEP 3: SELECT MACHINE

Select the machine to which this policy applies.

Specify a machine with its IP or MAC address, or select 'Other Machines' for machines that do not have a policy.

Address Type : IP MAC Other Machines

IP Address : <<

Machine Address : <<

Machine

Click **Add** and then click **Next** to continue.

Select the filtering method.

STEP 4: SELECT FILTERING METHOD

Select the method for filtering.

Method : Log Web Access Only Block All Access Block Some Access

Apply Web Filter :

Apply Advanced Port Filters :

If you select the option to **Block Some Access**, check **Apply Web Filter** and/or **Apply Advanced Port Filters**.

STEP 4: SELECT FILTERING METHOD

Select the method for filtering.

Method : Log Web Access Only Block All Access Block Some Access

Apply Web Filter :

Apply Advanced Port Filters :

Click **Next** to continue.

Add Port Filter Rules:

Enable - Check to enable the rule.

Name - Enter a name for your rule.

Dest IP Start - Enter the starting IP address.

Dest IP End - Enter the ending IP address.

Protocol - Select the protocol.

Dest Port Start - Enter the starting port number.

Dest Port End - Enter the ending port number.

STEP 5: PORT FILTER

Add Port Filters Rules.

Specify rules to prohibit access to specific IP addresses and ports.

Enable	Name	Dest IP Start	Dest IP End	Protocol	Dest Port Start	Dest Port End
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	1	65535

Prev Next Save Cancel

Click **Next**.

To enable **Web Access Logging**, click **Enabled**.

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

STEP 6: CONFIGURE WEB ACCESS LOGGING

Web Access Logging : Disabled
 Enabled

Prev Next Save Cancel

Your newly created policy will now show up under *Policy Table*.

ACCESS CONTROL

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



Save Settings Don't Save Settings Reboot Now

ENABLE

Enable Access Control :

Add Policy

POLICY TABLE

Enable Policy	Machine	Filtering	Logged	Schedule	
<input checked="" type="checkbox"/>	dlink	Block Some Access	No	Always	 

Website Filters

Website Filters are used to allow you to set up a list of Web sites that can be viewed by multiple users through the network. To use this feature select to **Allow** or **Deny**, enter the domain or website and click **Save Settings**. You must also select **Apply Web Filter** under the *Access Control* section (pages 82 - 83).

Configure Website Filter: Select either **DENY computers access to ONLY these sites** or **ALLOW computers access to ONLY these sites**.

Website URL/ Domain: Enter the keywords or URLs that you want to allow or block. Click **Save Settings**.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'ADVANCED' tab is selected, and the 'WEBSITE FILTER' option is highlighted in the left sidebar. The main content area is titled 'WEBSITE FILTER' and contains the following text: 'The Website Filter option allows you to set up a list of Web sites you would like to allow or deny through your network. To use this feature, you must also select the "Apply Web Filter" checkbox in the Access Control section.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. A section titled '40 -- WEBSITE FILTERING RULES' contains the text 'Configure Website Filter below:' and a dropdown menu set to 'DENY computers access to ONLY these sites'. Below the dropdown is a 'Clear the list below...' button. A table with the header 'Website URL/Domain' has six rows, each with two empty input fields. On the right side of the interface, there is a 'Helpful Hints...' section with the following bullet points:

- Create a list of Websites that you would like the devices on your network to be allowed or denied access to.
- Keywords can be entered in this list in order to block any URL containing the keyword entered.
- Use with **Advanced - > Access Control**.
- **More...**

Inbound Filters

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

Name: Enter a name for the inbound filter rule.

Action: Select **Allow** or **Deny**.

Remote IP Check to enable rule.

Range: Enable:

Remote IP Start: Enter the starting IP address.

Remote IP End: Enter the ending IP address.

Add: Click the **Add** button to apply your settings.

Inbound Filter Rules List: This section will list any rules that are created. You may click the **Edit** icon to change the settings or enable/disable the rule, or click the **Delete** icon to remove the rule.

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DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

INBOUND FILTER

The Inbound Filter option is an advanced method of controlling data received from the Internet. With this feature you can configure inbound data filtering rules that control data based on an IP address range.

Inbound Filters can be used for limiting access to a server on your network to a system or group of systems. Filter rules can be used with Virtual Server, Port Forwarding, or Remote Administration features.

ADD INBOUND FILTER RULE

Name :

Action :

Remote IP Range	Remote IP Start	Remote IP End
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>
<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>

INBOUND FILTER RULES LIST

Name	Action	Remote IP Range

WIRELESS

Helpful Hints...

- Give each rule a **Name** that is meaningful to you.
- Each rule can either **Allow** or **Deny** access from the WAN.
- Up to eight ranges of WAN IP addresses can be controlled by each rule. The checkbox by each IP range can be used to disable ranges already defined.
- The starting and ending IP addresses are WAN-side address.
- Click the **Add** button to store a finished rule in the Rules List below.
- Click the **Edit** icon in the Rules List to change a rule.
- Click the **Delete** icon in the Rules List to permanently remove a rule.
- [More...](#)

Firewall Settings

A firewall protects your network from the outside world. The DIR-860L offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

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

NAT Endpoint Select one of the following for TCP and UDP ports:

Filtering: Endpoint Independent - Any incoming traffic sent to an open port will be forwarded to the application that opened the port. The port will close if idle for 5 minutes.

Address Restricted - Incoming traffic must match the IP address of the outgoing connection.

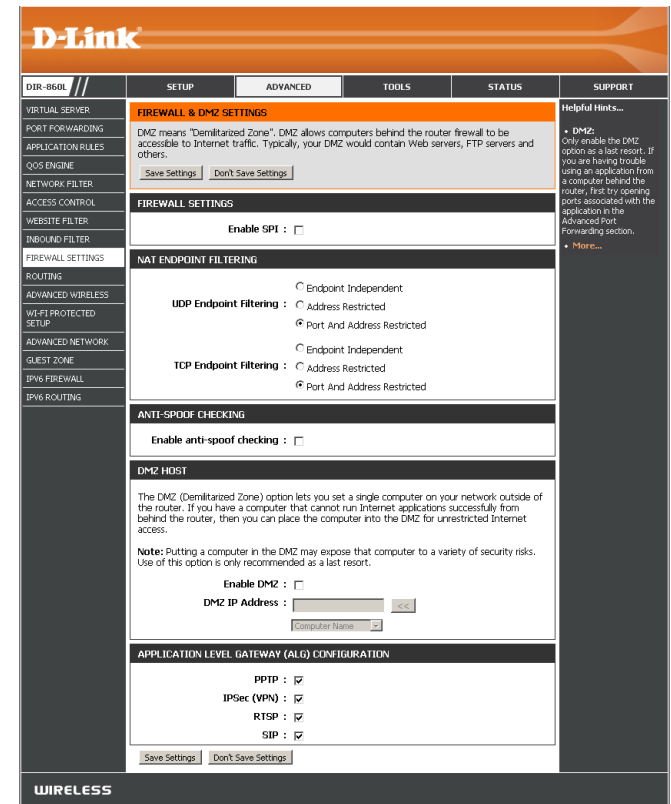
Port and Address Restricted - Incoming traffic must match the IP address and port of the outgoing connection.

Anti-Spoof Checking: Enable this feature to protect your network from certain kinds of “spoofing” attacks.

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

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

DMZ IP Address: Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication. If this computer obtains its IP address automatically using DHCP, be sure to make a static reservation on the **Setup > Network Settings** page so that the IP address of the DMZ machine does not change.



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

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

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

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

Routing

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

Name: Enter a name for your route.

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

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

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

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

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

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ROUTING

The Routing option allows you to define static routes to specific destinations.

Save Settings Don't Save Settings

32 -- ROUTE LIST

Remaining number of rules that can be created: 32

	Name	Destination IP	Metric	Interface
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	1	WAN (10.10.10.102)
	Netmask	Gateway		
	<input type="text"/>	<input type="text"/>		
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	1	WAN (10.10.10.102)
	Netmask	Gateway		
	<input type="text"/>	<input type="text"/>		
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	1	WAN (10.10.10.102)
	Netmask	Gateway		
	<input type="text"/>	<input type="text"/>		

Helpful Hints...

- **Enable:** Specifies whether the entry will be enabled or disabled.
- **Interface:** Specifies the interface -- WAN -- that the IP packet must use to transit out of the router, when this route is used.
- **Destination IP:** The IP address of packets that will take this route.
- **Netmask:** One bit in the mask specifies which bits of the IP address must match.
- **Gateway:** The gateway IP address is the IP address of the router, if any, used to reach the specified destination.
- **More...**

Advanced Wireless

Transmit Power: Set the transmit power of the antennas.

WLAN Partition: This enables 802.11d operation. 802.11d is a wireless specification developed to allow implementation of wireless networks in countries that cannot use the 802.11 standard. This feature should only be enabled if you are in a country that requires it.

WMM Enable: WMM is QoS for your wireless network. This will improve the quality of video and voice applications for your wireless clients.

HT20/40 Coexistence: Enable this option to reduce interference from other wireless networks in your area. If the channel width is operating at 40MHz and there is another wireless network's channel over-lapping and causing interference, the router will automatically change to 20MHz.

The screenshot displays the D-Link DIR-860L Advanced Wireless Settings page. The interface is divided into a left sidebar with navigation options and a main content area with two sections for 2.4GHz and 5GHz bands.

Navigation Sidebar:

- DIR-860L
- SETUP
- ADVANCED
- TOOLS
- STATUS
- SUPPORT
- VIRTUAL SERVER
- PORT FORWARDING
- APPLICATION RULES
- QOS ENGINE
- NETWORK FILTER
- ACCESS CONTROL
- WEBSITE FILTER
- INBOUND FILTER
- FIREWALL SETTINGS
- ROUTING
- ADVANCED WIRELESS
- WIFI PROTECTED SETUP
- ADVANCED NETWORK
- GUEST ZONE
- IPV6 FIREWALL
- IPV6 ROUTING

2.4GHz Band Settings:

- Wireless Band : 2.4GHz Band
- Transmit Power : High
- WLAN Partition :
- WMM Enable :
- HT 20/40 Coexistence : Enable Disable

5GHz Band Settings:

- Wireless Band : 5GHz Band
- Transmit Power : High
- WLAN Partition :
- WMM Enable :

Helpful Hints:

- It is recommended that you leave these parameters with their default values. Adjusting them could limit the performance of your wireless network.
- Enabling WMM can help control latency and jitter when transmitting multimedia content over a wireless connection.
- More...

Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) System is a simplified method for securing your wireless network during the “Initial setup” as well as the “Add New Device” processes. The Wi-Fi Alliance (WFA) has certified it across different products as well as manufactures. The process is just as easy as pressing a button for the Push-Button Method or correctly entering the 8-digit code for the Pin Code Method. The time reduction in setup and ease of use are quite beneficial, while the highest wireless Security setting of WPA2 is automatically used.

Enable: Enable the Wi-Fi Protected Setup feature.

Note: if this option is unchecked, the WPS button on the side of the router will be disabled.

WiFi Protected Setup: Displays the current WPS status.

Lock WPS-PIN Setup: Locking the WPS-PIN Method prevents the settings from being changed by any external registrar using its PIN. Devices can still be added to the wireless network using the Wi-Fi Protected Setup Push Button Configuration (WPS-PBC). It is still possible to change wireless networks settings with Manual Wireless Network Setup or Wireless Network Setup Wizard.

PIN Settings: A PIN is a unique number that can be used to add the router to an existing network or to create a new network. Only the Administrator (“admin” account) can change or reset the PIN.

PIN: Shows the current PIN.

Reset PIN to Default: Click to restore the default PIN of the router.

Generate New PIN: Create a random number that is a valid PIN. This becomes the router’s PIN. You can then copy this PIN to the user interface of the wireless client.

The screenshot displays the D-Link DIR-860L web interface for Wi-Fi Protected Setup (WPS) configuration. The interface includes a navigation menu with 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'ADVANCED' tab is selected, and the 'WI-FI PROTECTED SETUP' section is active. The page shows the current WPS status as 'Enable: [checked]', 'WiFi Protected Setup: Enable/Configured', and 'Lock WPS-PIN Setup: [unchecked]'. Below this, there is a 'PIN SETTINGS' section with the current PIN '74346363' and buttons for 'Reset PIN to Default' and 'Generate New PIN'. At the bottom, there is an 'ADD WIRELESS STATION' section with a 'Connect your Wireless Device' button. A 'Helpful Hints...' sidebar on the right provides additional information about enabling WPS, locking WPS-PIN, and connecting wireless devices.

Add Wireless Station: This Wireless Wizard helps you add wireless devices to the wireless network.

The wizard will either display the wireless network settings to guide you through manual configuration, prompt you to enter the PIN for the device, or ask you to press the configuration button on the device. If the device supports Wi-Fi Protected Setup and has a configuration button, you can add it to the network by pressing the configuration button on the device and then the on the router within 60 seconds. The status LED on the router will flash three times if the device has been successfully added to the network.

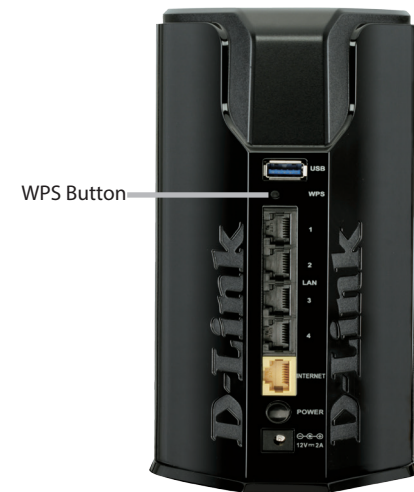
There are several ways to add a wireless device to your network. A “registrar” controls access to the wireless network. A registrar only allows devices onto the wireless network if you have entered the PIN, or pressed a special Wi-Fi Protected Setup button on the device. The router acts as a registrar for the network, although other devices may act as a registrar as well.

Connect Your Wireless Device: Click to start the wizard and skip to page 44.

WPS Button

You can also simply press the WPS button on the back of the router, and then press the WPS button on your wireless client to automatically connect without logging into the router.

Refer to page 116 for more information.



Advanced Network Settings

Enable UPnP IGD: To use the Universal Plug and Play (UPnP™) feature check the box. UPnP provides compatibility with networking equipment, software and peripherals.

Enable WAN Ping Response: Checking the box will allow the DIR-860L to respond to pings. Unchecking the box may provide some extra security from hackers.

WAN Port Speed: You may set the port speed of the Internet port to 10Mbps, 100Mbps, 1000Mbps, or Auto (recommended).

Enable IPV4 Multicast Streams: Check the box to allow multicast traffic to pass through the router from the Internet (IPv4).

Enable IPV6 Multicast Streams: Check the box to allow multicast traffic to pass through the router from the Internet (IPv6).

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DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

ADVANCED NETWORK SETTINGS

These options are for users that wish to change the LAN settings. We do not recommend changing these settings from factory default. Changing these settings may affect the behavior of your network.

Save Settings Don't Save Settings

UPnP

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

Enable UPnP IGD :

WAN PING

If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address.

Enable WAN Ping Response :

WAN PORT SPEED

WAN Port Speed : Auto 10/100/1000Mbps

IPV4 MULTICAST STREAMS

Enable IPv4 Multicast Streams :

IPV6 MULTICAST STREAMS

Enable IPv6 Multicast Streams :

Save Settings Don't Save Settings

WIRELESS

Helpful Hints...

- UPnP helps other UPnP LAN hosts interoperate with the router. Leave the UPnP option enabled as long as the LAN has other UPnP applications.
- For added security, it is recommended that you disable the **WAN Ping Response** option. Ping is often used by malicious Internet users to locate active networks or PCs.
- The WAN speed is usually detected automatically. If you are having problems connecting to the WAN, try selecting the speed manually.
- If you are having trouble receiving video on demand type of service from the Internet, make sure the Multicast Stream option is enabled.
- [More...](#)

Guest Zone

The Guest Zone feature will allow you to create temporary zones that can be used by guests to access the Internet. These zones will be separate from your main wireless network. You may configure different zones for the 2.4GHz and 5GHz wireless bands.

Enable Routing Check to allow network connectivity between the **Between Zones:** different zones created.

Enable Guest Zone: Check to enable the Guest Zone feature.

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

Wireless Network Name: Enter a wireless network name (SSID) that is different from your main wireless network.

Security Mode: Select the type of security or encryption you would like to enable for the guest zone.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'D-Link', 'DIR-860L', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration sections, with 'GUEST ZONE' highlighted. The main content area is titled 'GUEST ZONE' and contains the following configuration options:

- Enable Routing Between Zones:**
- SESSION 2.4GHZ:**
 - Enable Guest Zone: Always
 - Wireless Band: 2.4GHz Band
 - Wireless Network Name: (Also called the SSID)
 - Security Mode:
- SESSION 5GHZ:**
 - Enable Guest Zone: Always
 - Wireless Band: 5GHz Band
 - Wireless Network Name: (Also called the SSID)
 - Security Mode:

At the bottom of each session, there are 'Save Settings' and 'Don't Save Settings' buttons. A 'Helpful Hints...' section on the right provides additional information about the Guest Zone feature.

IPv6 Firewall

The DIR-860L's IPv6 Firewall feature allows you to configure which kind of IPv6 traffic is allowed to pass through the device. This feature functions in a similar way to the IP Filters feature.

Enable IPv6 Simple Security: Check the box to enable the IPv6 firewall simple security.

Configure IPv6 Filtering below: Select an action from the drop-down menu.

Name: Enter a name to identify the IPv6 firewall rule.

Schedule: Use the drop-down menu to select the time schedule that the IPv6 Firewall Rule will be enabled on. The schedule may be set to **Always**, which will allow the particular service to always be enabled. You can create your own times in the **Tools > Schedules** section.

Source: Use the **Interface** drop-down menu to specify the interface that connects to the source IPv6 addresses of the firewall rule.

IP Address Range: Enter the source IPv6 address range in the adjacent **IP Address Range** field.

Dest: Use the **Interface** drop-down menu to specify the interface that connects to the destination IP addresses of the firewall rule.

Protocol: Select the protocol of the firewall port (**All**, **TCP**, **UDP**, or **ICMP**).

Port Range: Enter the first port of the range that will be used for the firewall rule in the first box and enter the last port in the field in the second box.

The screenshot shows the D-Link web interface for the DIR-860L. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options, with 'IPv6 FIREWALL' selected. The main content area is titled 'IPv6 FIREWALL' and contains a 'Helpful Hints...' section on the right. The main configuration area is titled 'IPv6 SIMPLE SECURITY' and contains a checkbox for 'Enable IPv6 Simple Security'. Below this is a section for 'IPv6 FIREWALL RULES' showing a list of rules and a configuration form for a new rule. The form includes fields for Name, Schedule, Source Interface, IP Address Range, Dest Interface, IP Address Range, Protocol, and Port Range.

IPv6 Routing

This page allows you to specify custom routes that determine how data is moved around your network.

Route List: Check the box next to the route you wish to enable.

Name: Enter a specific name to identify this route.

Destination IP/ Prefix Length: This is the IP address of the router used to reach the specified destination or enter the IPv6 address prefix length of the packets that will take this route.

Metric: Enter the metric value for this rule here.

Interface: Use the drop-down menu to specify if the IP packet must use the WAN or LAN interface to transit out of the Router.

Gateway: Enter the next hop that will be taken if this route is used.

D-Link

DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

ROUTING

This Routing page allows you to specify custom routes that determine how data is moved around your network.

Save Settings Don't Save Settings

10 -- ROUTE LIST

<input type="checkbox"/>	Name	Destination IPv6 / Prefix Length
		/
	Metric	Gateway
	Interface	
		NULL
<input type="checkbox"/>	Name	Destination IPv6 / Prefix Length
		/
	Metric	Gateway
	Interface	
		NULL
<input type="checkbox"/>	Name	Destination IPv6 / Prefix Length
		/
	Metric	Gateway
	Interface	
		NULL

Helpful Hints...

- Each route has a check box next to it, check this box if you want the route to be enabled.
- The name field allows you to specify a name for identification of this route, e.g. 'Network 2'
- The destination IPv6 address is the address of the host or network you wish to reach.
- The prefix length field identifies the portion of the destination IP in use.
- The gateway IP address is the IP address of the router, if any, used to reach the specified destination.
- [More...](#)

Tools Admin

This page will allow you to change the Administrator password and also enable Remote Management.

Admin Password: Enter a new password for the Admin login name. Enter again to verify password.

Gateway Name: Enter a name for your router.

Enable Graphical Authentication: Enables a challenge-response test to require users to type letters or numbers from a distorted image displayed on the screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.

Enable HTTPS Server: Check to enable HTTPS to connect to the router securely. This means to connect to the router, you must enter **https://192.168.0.1** (for example) instead of **http://192.168.0.1**.

Enable Remote Management: Remote management allows the DIR-860L to be configured from the Internet by a web browser. A username/password is still required to access the Web Management interface.

Remote Admin Port: The port number used to access the DIR-860L is used in the URL. Example: **http://x.x.x.x:8080** whereas x.x.x.x is the Internet IP address of the DIR-860L and 8080 is the port used for the Web Management interface.

If you have enabled **HTTPS Server**, you must enter **https://** as part of the URL to access the router remotely.

Remote Admin Inbound Filter: This section will list any rules that are created. You may click the **Edit** icon to change the settings or enable/disable the rule, or click the **Delete** icon to remove the rule. **Details** will display the current remote admin filter.

The screenshot shows the D-Link DIR-860L Web Management interface. The top navigation bar includes 'D-Link', 'DIR-860L //', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'TOOLS' tab is selected, and the 'ADMIN' sub-tab is active. The main content area is titled 'ADMINISTRATOR SETTINGS' and contains the following sections:

- ADMINISTRATOR SETTINGS:** A text box explaining that the 'admin' account can access the management interface and can change its password. It notes that by default there is no password configured and recommends creating one. There are 'Save Settings' and 'Don't Save Settings' buttons.
- ADMIN PASSWORD:** A section with the instruction 'Please enter the same password into both boxes, for confirmation.' It contains two password input fields labeled 'Password' and 'Verify Password'.
- SYSTEM NAME:** A section with a text input field for 'Gateway Name' containing the value 'DIR-860L'.
- ADMINISTRATION:** A section with several settings:
 - 'Enable Graphical Authentication' with an unchecked checkbox.
 - 'Enable HTTPS Server' with a checked checkbox.
 - 'Enable Remote Management' with an unchecked checkbox.
 - 'Remote Admin Port' with a text input field containing '8080' and a 'Use HTTPS' checkbox.
 - 'Remote Admin Inbound Filter' with a dropdown menu set to 'Allow All'.
 - 'Details' with a text input field set to 'Allow All'.

At the bottom of the Administration section are 'Save Settings' and 'Don't Save Settings' buttons. On the right side of the page, there is a 'Helpful Hints...' section with several bullet points providing security and configuration advice.

Time

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the Time Server. You have the option of using NTP, which is short for Network Time Protocol. An NTP server will sync the time and date with your router. Daylight Saving can also be configured to automatically adjust the time when needed.

Time: Displays the current date and time of the router.

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

Enable Daylight Saving: Check to enable manual entry of daylight saving time.

Daylight Saving Offset: When daylight saving manual entry is enabled, the offset value is one hour by default.

Daylight Saving Dates: Enter a start date, an end date, including day of the week, and time for daylight saving time.

Automatically Synchronize with D-Link's Internet Time Server: This option is strongly recommended. Check the box to have the router connect to an NTP server on the Internet (not a local server).

NTP Server Used: Select an NTP server from the drop-down box and click **Update Now**.

Set the Time and Date Manually: To manually input the time, enter the values in these fields for the *Year, Month, Day, Hour, Minute, and Second* and then click **Save Settings**.

You can also click **Sync. Your Computer's Time Settings** to synch the date and time with the computer you are currently on.

D-Link

DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

TIME AND DATE

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

Save Settings Don't Save Settings

TIME AND DATE CONFIGURATION

Time : 2000/01/04 18:00:34

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

Enable Daylight Saving :

Daylight Saving Offset : +01:00

Daylight Saving Dates :

	Month	Week	Day of Week	Time
DST Start	Jan	1st	Sun	12:00 AM
DST End	Jan	1st	Sun	12:00 AM

AUTOMATIC TIME AND DATE CONFIGURATION

Automatically synchronize with D-Link's Internet time server

NTP Server Used : ntp1.dlink.com Update Now

Synchronizing ...

SET THE TIME AND DATE MANUALLY

Year	2009	Month	Jan	Day	4
Hour	18	Minute	0	Second	13

Sync. your computer's time settings

Save Settings Don't Save Settings

WIRELESS

Helpful Hints...

- Either enter the time manually by clicking the **Sync. Your Computers Time Settings** button, or use the **Automatic Time Configuration** option to have your router synchronize with a time server on the Internet.
- [More...](#)

SysLog

The DIR-860L keeps a running log of events and activities occurring on the Router. You may send these logs to a SysLog server on your network.

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

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

The screenshot displays the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SYSLOG' menu item is selected, showing a sub-header 'SYSLOG' and a description: 'The SysLog options allow you to send log information to a Syslog Server.' Below this are 'Save Settings' and 'Don't Save Settings' buttons. The 'SYSLOG SETTINGS' section contains the following options:

- Enable Logging To SysLog :** **Server**
- Syslog Server IP Address :** << >>

At the bottom of the settings section are 'Save Settings' and 'Don't Save Settings' buttons. On the right side, there is a 'Helpful Hints...' section with the following text:

- A System Logger (syslog) is a server that collects in one place the logs from different sources. If the LAN includes a syslog server, you can use this option to send the router's logs to that server.
- [More...](#)

The bottom of the interface features a 'WIRELESS' tab.

Email Settings

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

Enable Email Notification: When this option is enabled, router activity logs are emailed to a designated email address.

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

To Email Address: Enter the email address where you want the email sent.

Email Subject: Add a subject line to your email.

SMTP Server Address: Enter the SMTP server address for sending email.

SMTP Server Port: Enter the SMTP port used on the server.

Enable Authentication: Check this box if your SMTP server requires authentication.

Account Name: Enter your account for sending email.

Password: Enter the password associated with the account. Re-type the password associated with the account.

On Log Full: When this option is selected, logs will be sent via email to your account when the log is full.

On Schedule: Selecting this option will send the logs via email according to schedule.

Schedule: This option is enabled when **On Schedule** is selected. You can select a schedule from the list of defined schedules. To create a schedule, go to **Tools > Schedules**.

Detail: Detail will display selected schedule.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists menu items: ADMIN, TIME, SYSLOG, EMAIL SETTINGS (selected), SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'EMAIL SETTINGS' and contains the following sections:

- EMAIL SETTINGS:** A message stating 'The Email feature can be used to send the system log files and router alert messages to your email address.' with 'Save Settings' and 'Don't Save Settings' buttons.
- EMAIL NOTIFICATION:** A section with 'Enable Email Notification :
- EMAIL SETTINGS:** A form with the following fields:
 - From Email Address :
 - To Email Address :
 - Email Subject :
 - SMTP Server Address :
 - SMTP Server Port :
 - Enable Authentication :
 - Account Name :
 - Password :
 - Verify Password :
- EMAIL LOG WHEN FULL OR ON SCHEDULE:** A section with the following fields:
 - On Log Full :
 - On Schedule :
 - Schedule :
 - Detail :

At the bottom of the form are 'Save Settings' and 'Don't Save Settings' buttons. A 'Send Mail Now' button is located next to the Verify Password field. The footer of the page displays 'WIRELESS'. On the right side, there is a 'Helpful Hints...' section with a tip: 'You may want to make the email settings similar to those of your email client program.' and a 'More...' link.

System

This section allows you to manage the router's configuration settings, reboot the router, and restore the router to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules that you've created.

Save Settings to Local Hard Drive: Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save Configuration** button. A file dialog will appear, allowing you to select a location and file name for the settings.

Load Settings from Local Hard Drive: Use this option to load previously saved router configuration settings. First, use the **Choose File** option to find a previously saved file of configuration settings. Then, click the **Restore Configuration from File** button to transfer those settings to the router.

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

Reboot the Device: Click to reboot the router.

Clear Language Pack: Click **Clear** to remove any installed language packs.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists menu items: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'SAVE AND RESTORE SETTINGS' and contains the following options:

- Save Settings To Local Hard Drive :** Save Configuration
- Load Settings From Local Hard Drive :** Choose File (No file chosen), Restore Configuration From File
- Restore To Factory Default Settings :** Restore Factory Defaults
- Reboot The Device :** Reboot the Device
- Clear Language Pack :** Clear

The right sidebar, titled 'Helpful Hints...', contains a tip: 'Once your router is configured the way you want it, you can save these settings to a configuration file that can later be loaded in the event that the router's default settings are restored. To do this, click the Save button next to where it says Save Settings to Local Hard Drive.' and a 'More...' link.

Firmware

You can upgrade the firmware of the router here. Make sure the firmware you want to use is on the local hard drive of the computer.

Firmware Upgrade

Choose File: After you have downloaded the new firmware, click **Choose File** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

Upload: Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the access point.

Language Pack Upgrade

You can change the language of the web UI by uploading available language packs.

Choose File: After you have downloaded the new language pack, click **Choose File** to locate the language pack file on your hard drive. Click **Upload** to complete the language pack upgrade.

Upload: Once you have a language pack update on your computer, use this option to browse for the file and then upload the information into the access point.

The screenshot displays the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various settings: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'FIRMWARE UPDATE' and contains the following information:

- FIRMWARE UPDATE:** A section with an orange header containing instructions on how to upgrade the firmware and a link to check for updates.
- FIRMWARE INFORMATION:** A section showing the current firmware version (1.00) and time (02/27/2013 18:53:00), along with a 'Check Now' button.
- FIRMWARE UPGRADE:** A section with a red note stating that some firmware upgrades reset configuration options to factory defaults. It includes an 'Upload' button with a 'Choose File' input field and a 'No file chosen' message.
- LANGUAGE PACK UPGRADE:** A section with an 'Upload' button and a 'Choose File' input field, similar to the firmware upgrade section.

On the right side, there is a 'Helpful Hints...' section with a bullet point about firmware updates and a 'More...' link. The bottom of the interface features the 'WIRELESS' logo.

Dynamic DNS

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

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

Server Address: Select your DDNS provider from the drop-down menu or enter the DDNS server address.

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

Username or Key: Enter the Username or key for your DDNS account.

Password or Key: Enter the Password or key for your DDNS account.

Timeout: Enter a timeout time (in hours).

Status: Displays the current connection status.

The screenshot shows the D-Link DIR-860L Dynamic DNS configuration page. The page is titled "D-Link" and has a navigation bar with "SETUP", "ADVANCED", "TOOLS", "STATUS", and "SUPPORT". The "DYNAMIC DNS" section is highlighted in orange. It contains the following text: "The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server no matter what your IP address is." Below this is a link: "Sign up for D-Link's Free DDNS service at www.DLinkDDNS.com." There are two buttons: "Save Settings" and "Don't Save Settings".

The "DYNAMIC DNS SETTINGS" section contains the following fields:

- Enable Dynamic DNS :
- Server Address :
- Host Name :
- Username or Key :
- Password or Key :
- Verify Password or Key :
- Timeout : 567 (hours)
- Status : Disconnected

The "DYNAMIC DNS FOR IPV6 HOSTS" section contains the following fields:

- Enable :
- IPv6 Address :
- Host Name : (e.g.: ipv6.mydomain.net)

There are "Save" and "Clear" buttons below the IPv6 section.

The "IPV6 DYNAMIC DNS LIST" section contains a table with the following columns: "Enable", "Host Name", and "IPv6 Address". There are "Save Settings" and "Don't Save Settings" buttons below the table.

The page also has a "Helpful Hints..." section on the right side with the following text: "To use this feature, you must first have a Dynamic DNS account from one of the providers in the drop down menu." "We could also use DDNS function for IPv6 with the same account as IPv4." "More..."

Dynamic DNS for IPv6 Hosts

Enable: Check the box to enable DDNS for IPv6 Hosts.

IPv6 Address: Enter the IPv6 address of your computer/server in your local network. You can click the << button and select a computer/server from the drop-down list.

Host Name: Enter the IPv6 Host Name that you registered with your DDNS service provider. Click **Save**.

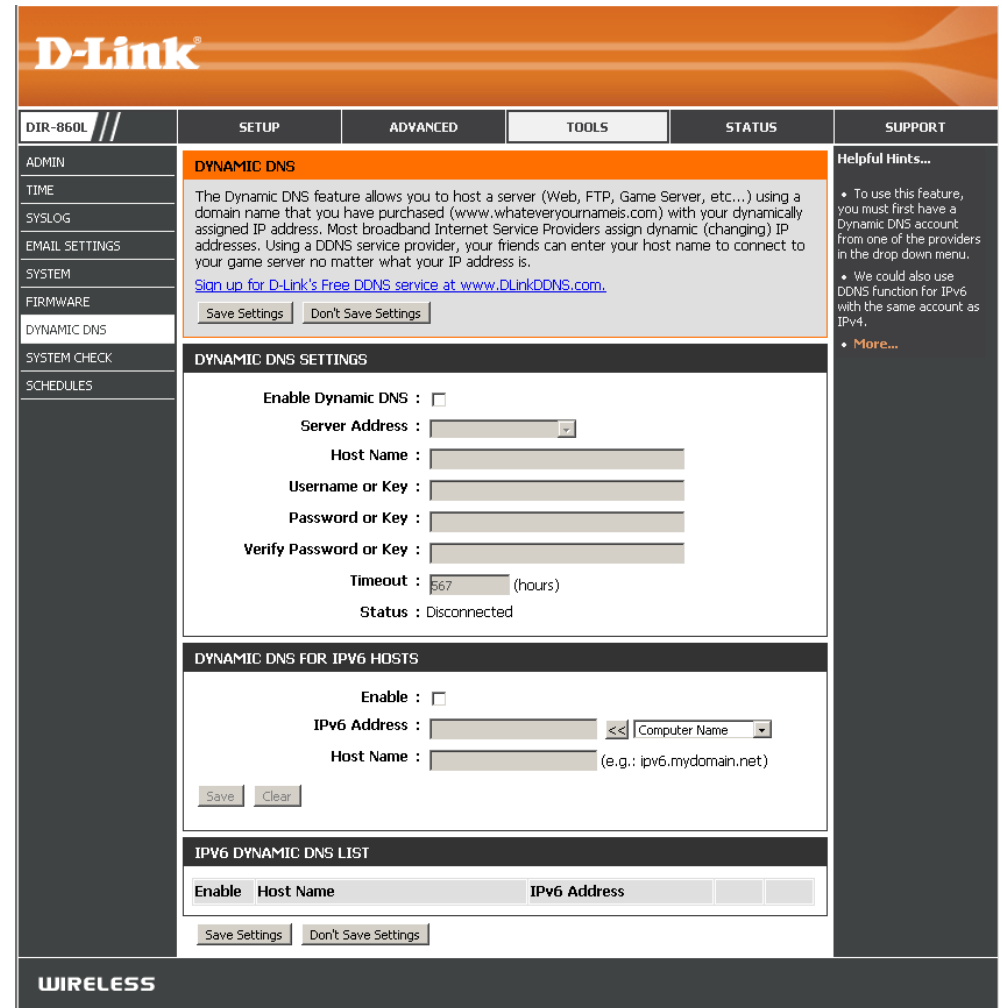
IPv6 DDNS List: Once you save your entry, the IPv6 DDNS host information will be displayed here.

Enable: Check to enable the entry.

Host Name: Displays the name of your IPv6 DDNS host.

IPv6 Address: Displays the IPv6 address of your computer/server associated with the IPv6 DDNS host.

Edit/Delete: Click the edit icon to make changes to the entry or click the delete icon to remove the entry.



System Check

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

IPv6 Ping Test: Enter the IPv6 address that you wish to Ping and click **Ping**.

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

D-Link	
DIR-860L	TOOLS
ADMIN	PING TEST
TIME	Ping Test sends "ping" packets to test a computer on the Internet.
SYSLOG	PING TEST
EMAIL SETTINGS	Host Name or IP Address : <input type="text"/> <input type="button" value="Ping"/>
SYSTEM	IPV6 PING TEST
FIRMWARE	Host Name or IPv6 Address : <input type="text"/> <input type="button" value="Ping"/>
DYNAMIC DNS	PING RESULT
SYSTEM CHECK	Enter a host name or IP address above and click 'Ping'
SCHEDULES	
WIRELESS	

Helpful Hints...

- "Ping" checks whether a computer on the Internet is running and responding. Enter either the IP address of the target computer or enter its fully-qualified domain name.
- [More...](#)

Schedules

Schedules can be created for use with enforcing rules. For example, if you want to restrict web access to Mon-Fri from 3pm to 8pm, you could create a schedule selecting Mon, Tue, Wed, Thu, and Fri and enter a Start Time of 3pm and End Time of 8pm.

Name: Enter a name for your new schedule.

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

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

Add: You must click **Add** to save your schedule rule.

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

D-Link

DIR-860L // SETUP ADVANCED TOOLS STATUS SUPPORT

SCHEDULES

The Schedule configuration option is used to manage schedule rules for "WAN", "Wireless", "Virtual Server", "Port Forwarding", "Applications" and "Network Filter".

10 -- ADD SCHEDULE RULE

Name :

Day(s) : All Week Select Day(s)
 Sun Mon Tue Wed Thu Fri Sat

All Day - 24 hrs :

Time Format :

Start Time : : (hour:minute)

End Time : : (hour:minute)

SCHEDULE RULES LIST

Name	Day(s)	Time Frame

Helpful Hints...

- Schedules are used with a number of other features to define when those features are in effect.
- Give each schedule a name that is meaningful to you. For example, a schedule for Monday through Friday from 3:00pm to 9:00pm, might be called "After School".
- Click **Add** to add a completed schedule to the list below.
- Click **Edit** icon to change an existing schedule.
- Click **Delete** icon to permanently delete a schedule.
- More...**

WIRELESS

Status

Device Info

This page displays the current information for the DIR-860L. It will display the LAN, WAN (Internet), and Wireless information. If your Internet connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

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

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

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

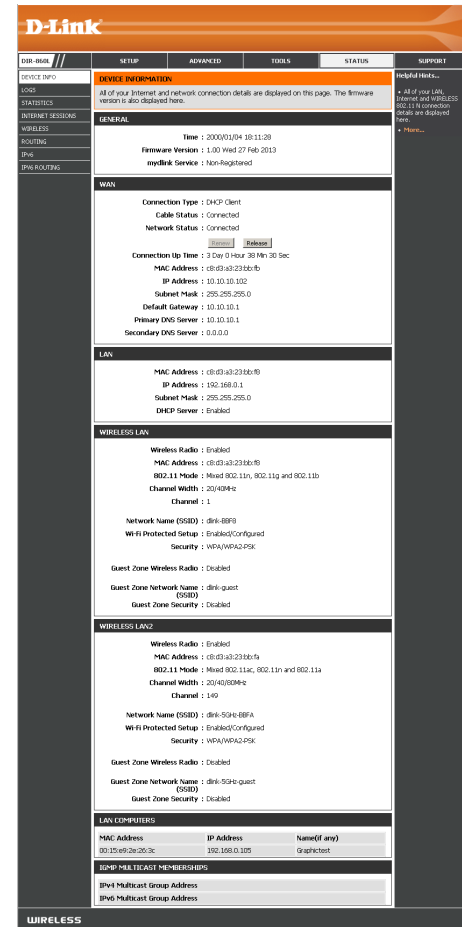
LAN: Displays the MAC address and the private (local) IP settings for the router.

Wireless LAN1: Displays the 2.4GHz wireless MAC address and your wireless settings such as SSID and Channel.

Wireless LAN2: Displays the 5GHz wireless MAC address and your wireless settings such as SSID and Channel.

LAN Computers: Displays computers and devices that are connected to the router via Ethernet and that are receiving an IP address assigned by the router (DHCP).

IGMP Multicast Memberships: Displays IPv4 and IPv6 multicast group addresses.



The screenshot shows the D-Link web interface for the DIR-860L router. The main menu includes DIR-860L, SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The 'STATUS' tab is selected, and the 'DEVICE INFORMATION' sub-tab is active. The page displays the following information:

- GENERAL:**
 - Time: 2000/1/04 18:11:28
 - Firmware Version: 1.00 Wed 27 Feb 2013
 - myLink Service: Non-Registered
- WAN:**
 - Connection Type: DHCP Client
 - Cable Status: Connected
 - Network Status: Connected
 - Connection Up Time: 2 Day 0 Hour 28 Min 36 Sec
 - MAC Address: c8:85:a2:23:8e:b5
 - IP Address: 10.10.10.102
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 10.10.10.1
 - Primary DNS Server: 10.10.10.1
 - Secondary DNS Server: 0.0.0.0
- LAN:**
 - MAC Address: c8:85:a2:23:8e:b5
 - IP Address: 192.168.0.1
 - Subnet Mask: 255.255.255.0
 - DHCP Server: Enabled
- WIRELESS LAN1:**
 - Wireless Radio: Enabled
 - MAC Address: c8:85:a2:23:8e:b5
 - BSSID: Mixed 802.11n, 802.11g and 802.11b
 - Channel Width: 20/40MHz
 - Channel: 1
 - Network Name (SSID): dlink-889F
 - WiFi Protected Setup: Enabled/Configured
 - Security: WPA/WPA2-PSK
 - Guest Zone Wireless Radio: Disabled
 - Guest Zone Network Name: dlink-guest
 - Guest Zone (SSID): Disabled
 - Guest Zone Security: Disabled
- WIRELESS LAN2:**
 - Wireless Radio: Enabled
 - MAC Address: c8:85:a2:23:8e:b5
 - BSSID: Mixed 802.11ac, 802.11n and 802.11a
 - Channel Width: 20/40/80MHz
 - Channel: 149
 - Network Name (SSID): dlink-594E-B8FA
 - WiFi Protected Setup: Enabled/Configured
 - Security: WPA/WPA2-PSK
 - Guest Zone Wireless Radio: Disabled
 - Guest Zone Network Name: dlink-594E-guest
 - Guest Zone (SSID): Disabled
 - Guest Zone Security: Disabled
- LAN COMPUTERS:**

MAC Address	IP Address	Name (if any)
90:25:ef:2e:26:3c	192.168.0.105	Graphical
- IGMP MULTICAST MEMBERSHIPS:**

IPv4 Multicast Group Address	IPv6 Multicast Group Address

Logs

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

Save Log File: Click **Save** to save log file to local hard drive.

Log Type & Level: You can select the type and level indicating what you would like to keep track of.

First Page: Click to go to the first page.

Last Page: Click to go to the last page.

Previous: Click to go back one page.

Next: Click to go to the next page.

Clear: Clears all of the log contents.

Link to Email Log Settings: Clicking on this will take you to the **Tools > Email Settings** page.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration categories: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS, WIRELESS, ROUTING, IPv6, and IPv6 ROUTING. The main content area is titled 'VIEW LOG' and contains the following sections:

- VIEW LOG:** A text box stating 'The View Log displays the activities occurring on the router.' with 'Save Settings' and 'Don't Save Settings' buttons.
- SAVE LOG FILE:** A section with the text 'Save Log File To Local Hard Drive.' and a 'Save' button.
- LOG TYPE & LEVEL:** Radio buttons for Log Type (System, Firewall & Security, Router Status) and Log Level (Critical, Warning, Information).
- LOG FILES:** A table of log entries with columns for Time and Message. Navigation buttons for 'First Page', 'Last Page', 'Previous', 'Next', 'Clear', and 'Link To Email Log Settings' are located above the table.

The 'LOG FILES' table contains the following data:

Time	Message
Tue Jan 4 17:32:58 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Tue Jan 4 12:00:34 2000	DHCP: Server sending ACK to 192.168.0.105. (Lease time = 604800)
Tue Jan 4 12:00:34 2000	DHCP: Server receive REQUEST from 00:15:e9:2e:26:3c.
Tue Jan 4 05:32:58 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Mon Jan 3 17:32:58 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Mon Jan 3 05:32:57 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Sun Jan 2 17:32:57 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Sun Jan 2 05:32:57 2000	DHCP: Client receive ACK from 10.10.10.1, IP=10.10.10.102, Lease time=86400.
Sun Jan 2 01:44:08 2000	Web logout from 192.168.0.105
Sun Jan 2 01:32:26 2000	Web logout from 192.168.0.105

The right sidebar contains 'Helpful Hints...' with the following text:

- Click on the Save button to save log file to local hard drive which can later send to the network administrator for troubleshooting. You can also select what type of event you would like to be logged from Log Type & Level.
- Check the log frequently to detect unauthorized network usage.
- You can also have the log mailed to you periodically. Refer to **Tools -> EMail**.
- [More...](#)

Statistics

The screen below displays the **Traffic Statistics**. Here you can view the amount of packets that pass through the DIR-860L on both the WAN, LAN ports and the wireless segments. The traffic counter will reset if the device is rebooted.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes 'DIR-860L', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options, with 'STATISTICS' selected. The main content area displays the following statistics:

TRAFFIC STATISTICS			
Traffic Statistics displays Receive and Transmit packets passing through the device.			
Refresh Statistics		Reset Statistics	
LAN STATISTICS			
Sent :	38525	Received :	21862
TX Packets Dropped :	0	RX Packets Dropped :	0
Collisions :	0	Errors :	0
WAN STATISTICS			
Sent :	71305	Received :	688606
TX Packets Dropped :	0	RX Packets Dropped :	0
Collisions :	0	Errors :	0
WIRELESS STATISTICS - 2.4GHZ BAND			
Sent :	3602	Received :	0
TX Packets Dropped :	0	RX Packets Dropped :	0
Collisions :	0	Errors :	0
WIRELESS STATISTICS - 5GHZ BAND			
Sent :	3590	Received :	0
TX Packets Dropped :	0	RX Packets Dropped :	0
Collisions :	0	Errors :	0

The 'Helpful Hints...' sidebar on the right contains the following text:

- This is a summary displaying the number of packets that have passed between the Internet and the LAN since the router was last initialized.
- [More...](#)

The bottom of the page features a 'WIRELESS' tab.

Internet Sessions

The Internet Sessions page displays full details of active Internet sessions through your router. An Internet session is a conversation between a program or application on a LAN-side computer and a program or application on a WAN-side computer.

The screenshot shows the D-Link DIR-860L web interface. At the top is the D-Link logo. Below it is a navigation bar with tabs: DIR-860L //, SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains a menu with items: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS (highlighted), WIRELESS, ROUTING, IPv6, and IPv6 ROUTING. The main content area is titled 'INTERNET SESSIONS' and contains the text: 'This page displays Source and Destination sessions passing through the device.' Below this text is a 'Refresh' button. A table header is visible with columns: IP, TCP Count, and UDP Count. On the right side, there is a 'Helpful Hints...' section with a bullet point: 'This is a list of all active conversations between WAN computers and LAN computers.' and a link for 'More...'. At the bottom of the page, the word 'WIRELESS' is displayed.

Wireless

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

The screenshot shows the D-Link web interface for a DIR-860L router. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration sections, with WIRELESS selected. The main content area is titled 'CONNECTED WIRELESS CLIENT LIST' and contains the following information:

- CONNECTED WIRELESS CLIENT LIST**: View the wireless clients that are connected to the router. (A client might linger in the list for a few minutes after an unexpected disconnect.)
- NUMBER OF WIRELESS CLIENTS - 2.4GHZ BAND : 0**
- NUMBER OF WIRELESS CLIENTS - 5GHZ BAND : 0**

Below the band counts, there are two identical table headers for listing clients:

MAC Address	IP Address	Mode	Rate (Mbps)	Signal (%)
-------------	------------	------	-------------	------------

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

- This is a list of all wireless clients that are currently connected to your wireless router.
- [More...](#)

The bottom of the page features a dark grey bar with the word 'WIRELESS' in white capital letters.

Routing

This page will display your current routing table.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains a menu with options: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS, WIRELESS, ROUTING (selected), IPv6, and IPv6 ROUTING. The main content area is titled "ROUTING" and "Routing Table". Below this, a descriptive text states: "This page displays the routing details configured for your router." A table titled "ROUTING TABLE" displays the following data:

Destination	Gateway	Genmask	Metric	Iface	Creator
192.168.7.0	0.0.0.0	255.255.255.0	0	LAN	SYSTEM
192.168.0.0	0.0.0.0	255.255.255.0	0	LAN	SYSTEM
10.10.10.0	0.0.0.0	255.255.255.0	0	INTERNET	SYSTEM
239.0.0.0	0.0.0.0	255.0.0.0	0	LAN	SYSTEM
0.0.0.0	10.10.10.1	255.255.255.255	100	INTERNET	SYSTEM

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

- This is a list of all routing rules on router.
- [More...](#)

The bottom of the interface features a "WIRELESS" section header.

IPv6

The IPv6 page displays a summary of the Router's IPv6 settings and lists the IPv6 address and host name of any IPv6 clients.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains a menu with options: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS, WIRELESS, ROUTING, IPv6, and IPv6 ROUTING. The main content area is titled "IPv6 NETWORK INFORMATION" and contains the following text:

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

IPv6 CONNECTION INFORMATION

IPv6 Connection Type : Link-Local
IPv6 Default Gateway : None
LAN IPv6 Link-Local Address : fe80::cad3:a3ff:fe23:bbf8 /64

LAN IPv6 COMPUTERS

IPv6 Address	Name(if any)
--------------	--------------

Helpful Hints...

- All of your WAN and LAN connection details are displayed here.
- [More...](#)

At the bottom of the interface, there is a "WIRELESS" section header.

IPV6 Routing

This page displays the IPV6 routing details configured for your router.

The screenshot shows the D-Link DIR-860L web interface. The top navigation bar includes the D-Link logo and tabs for DIR-860L, SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains a menu with options: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS, WIRELESS, ROUTING, IPv6, and IPV6 ROUTING. The main content area is titled "IPV6 ROUTING" and contains the text: "This page displays IPV6 routing details configured for your router." Below this is a section titled "IPV6 ROUTING TABLE" with a table header: Destination IP, Gateway, Metric, and Interface. The table body is currently empty. On the right side, there is a "Helpful Hints..." section with a bullet point: "This is a list of all IPv6 routing rules on router." and a link for "More...". The bottom of the interface features a "WIRELESS" section.

Support

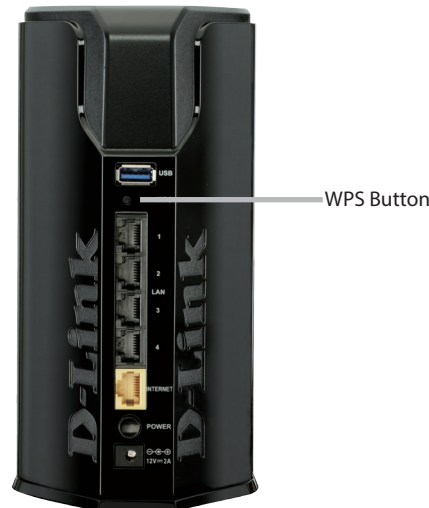
The screenshot displays the D-Link DIR-860L web interface. At the top, the D-Link logo is visible. Below it, a navigation bar contains tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The SUPPORT tab is selected. On the left side, a vertical menu lists the main sections: MENU, SETUP, ADVANCED, TOOLS, and STATUS. The main content area is titled 'SUPPORT MENU' and contains four sub-sections: 'SUPPORT MENU' (with links to Setup, Advanced, Tools, and Status), 'SETUP HELP' (with links to Internet, Wireless Settings, Network Settings, Storage, Media Server, IPv6, and MYDLINK SETTINGS), 'ADVANCED HELP' (with links to Virtual Server, Port Forwarding, Application Rules, QoS Engine, Network Filter, Access Control, Website Filter, Inbound Filter, Firewall Settings, Routing, Advanced Wireless, Wi-Fi Protected Setup, Advanced Network, Guest Zone, IPv6 Firewall, and IPv6 Routing), 'TOOLS HELP' (with links to Device Administration, Time, Syslog, Email Settings, System, Firmware, Dynamic DNS, System Check, and Schedules), and 'STATUS HELP' (with links to Device Info, Logs, Statistics, Internet Sessions, Wireless, Routing, IPv6, and IPv6 Routing). At the bottom of the interface, the word 'WIRELESS' is displayed.

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 DIR-860L 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 DIR-860L for about one second. The Internet LED on the front will start to blink.



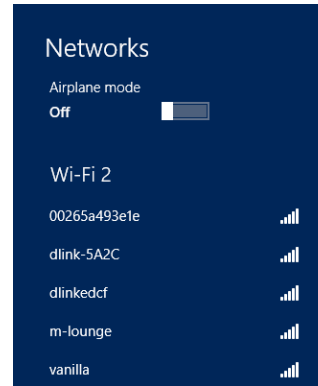
Step 2 - Within two minutes, press the WPS button on your wireless client (or launch the software utility and start the WPS process).

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

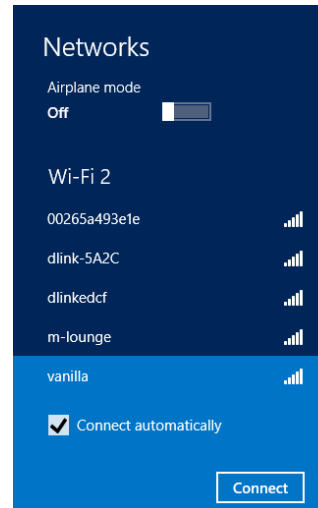
Windows® 8

1. Click on the wireless computer icon in your system tray (lower-right corner next to the time).

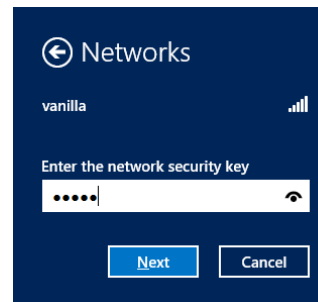
2. A list of available wireless networks will appear.



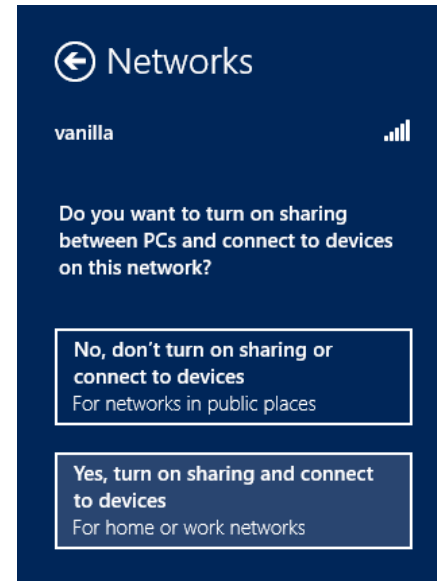
3. Click the wireless network (SSID) you want to connect to and then click **Connect**.



4. If the network is secure/encrypted, enter the Wi-Fi password (security key) and click **Next**.



5. Click either to enable or disable file sharing.
6. You will now be connected to your wireless network.



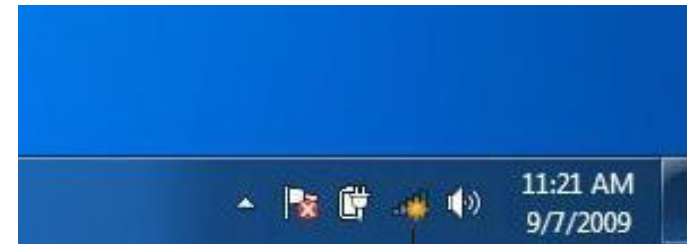
If you get a good signal but cannot access the Internet, confirm the encryption by reviewing the profile or check the TCP/IP settings for your wireless adapter. Refer to the *Networking Basics* section in this manual for more information.

Windows® 7

WPA/WPA2

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

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



Wireless Icon

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

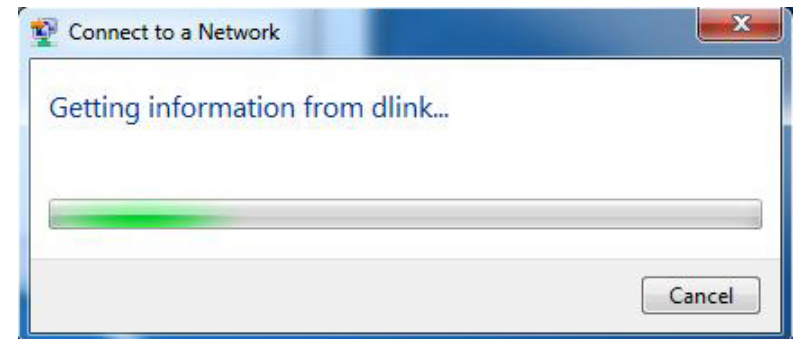


3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

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.

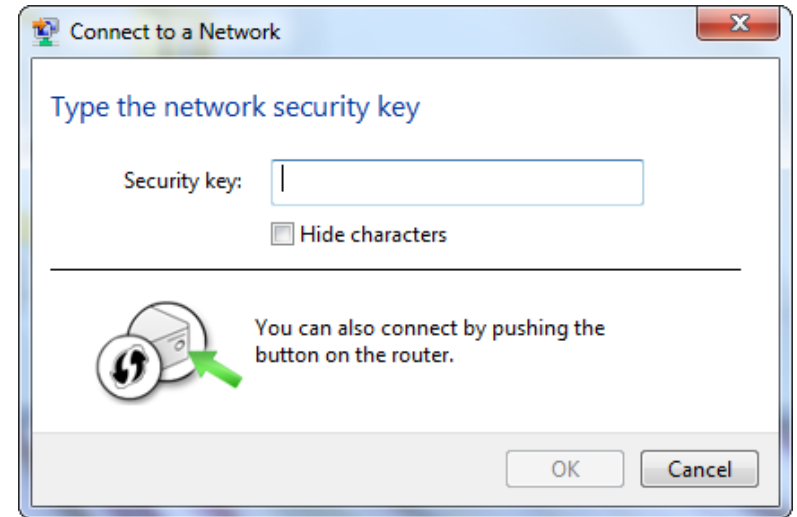


4. The following window appears while your computer tries to connect to the router.



5. Enter the same security key or passphrase that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

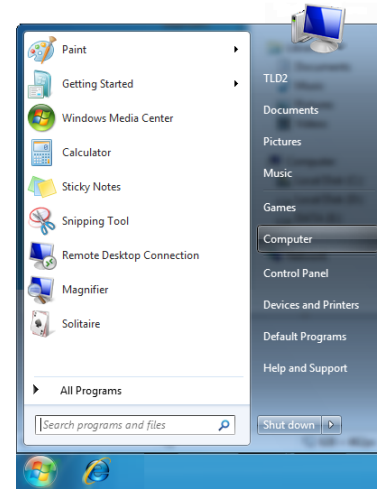
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.



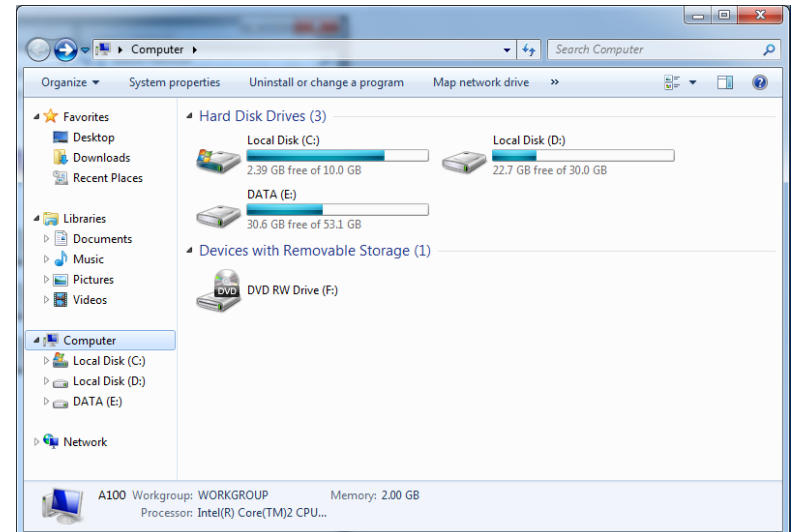
WPS

The WPS feature of the DIR-860L can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature:

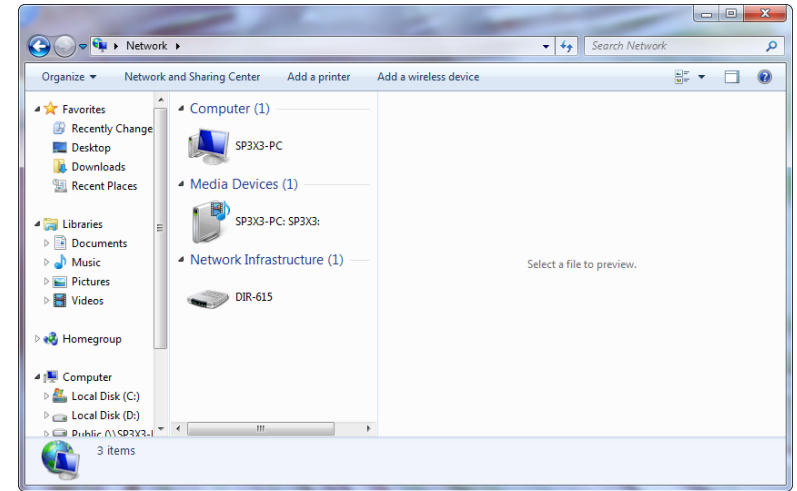
1. Click the **Start** button and select **Computer** from the Start menu.



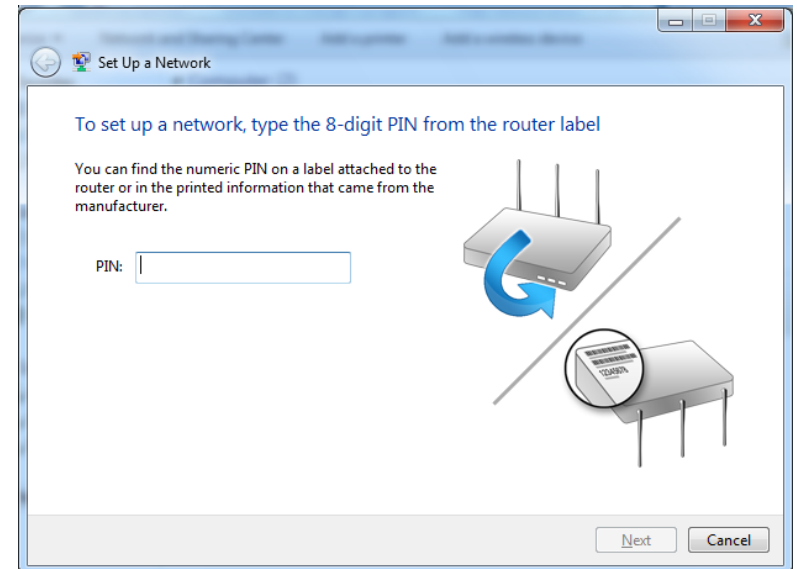
2. Click **Network** on the left side.



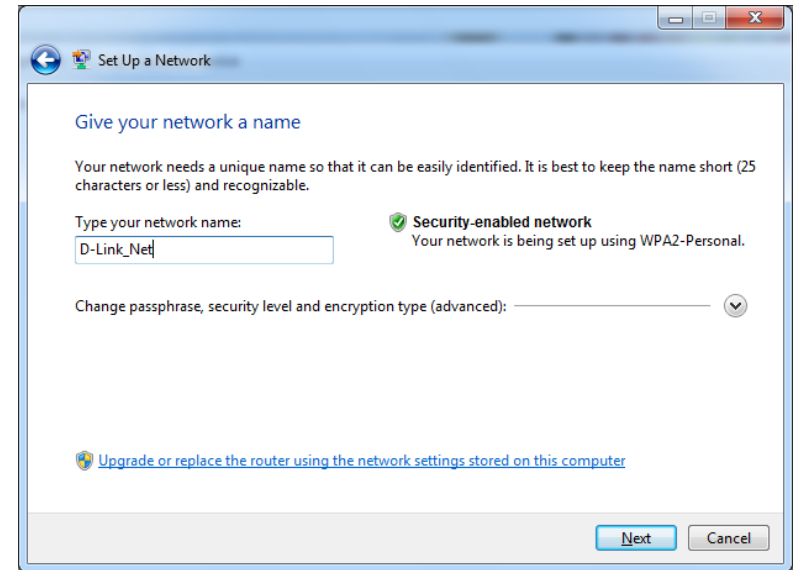
3. Double-click the DIR-860L.




4. Input the WPS PIN number (displayed in the WPS window on the Router's LCD screen or in the **Setup** > **Wireless Setup** menu in the Router's Web UI) and click **Next**.

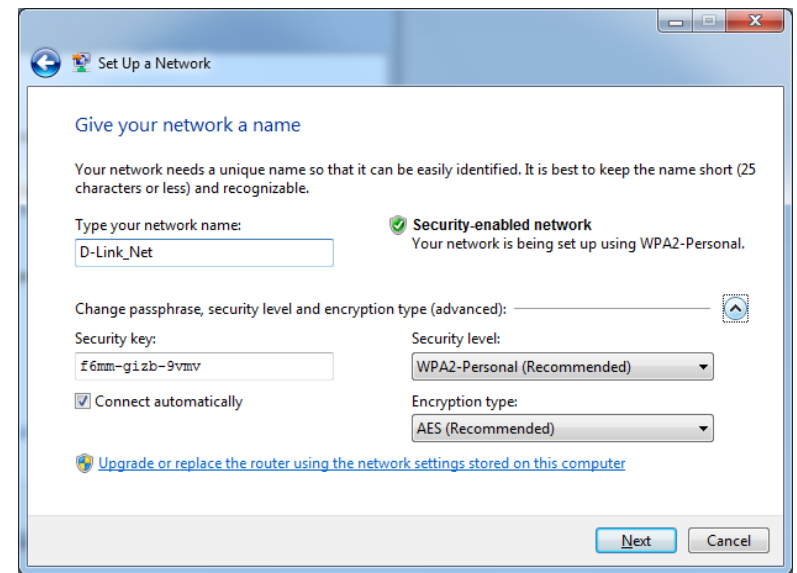


5. Type a name to identify the network.



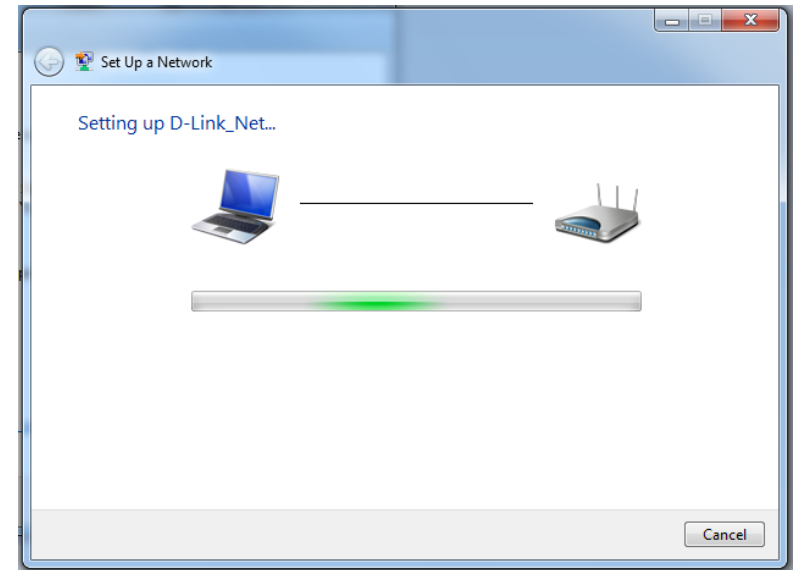
6. To configure advanced settings, click the  icon.

Click **Next** to continue.



7. The following window appears while the Router is being configured.

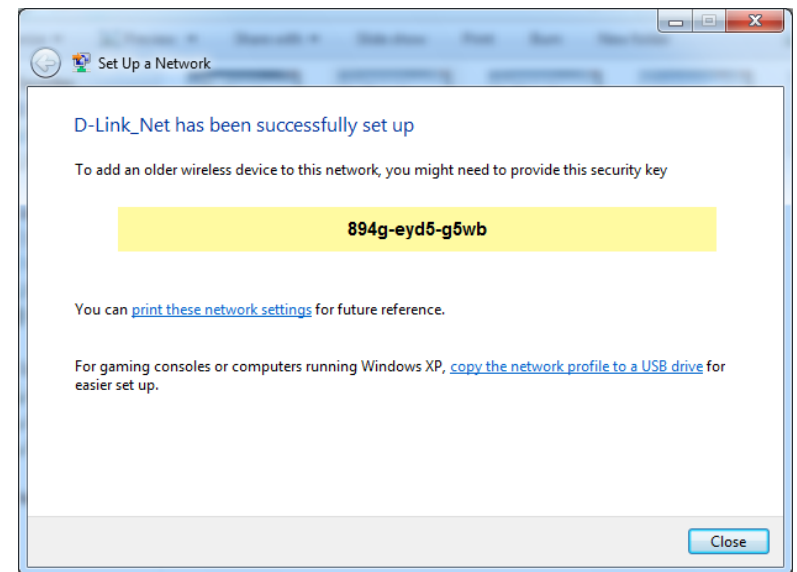
Wait for the configuration to complete.



8. The following window informs you that WPS on the router has been setup successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.

9. Click **Close** to complete WPS setup.



Windows Vista®

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

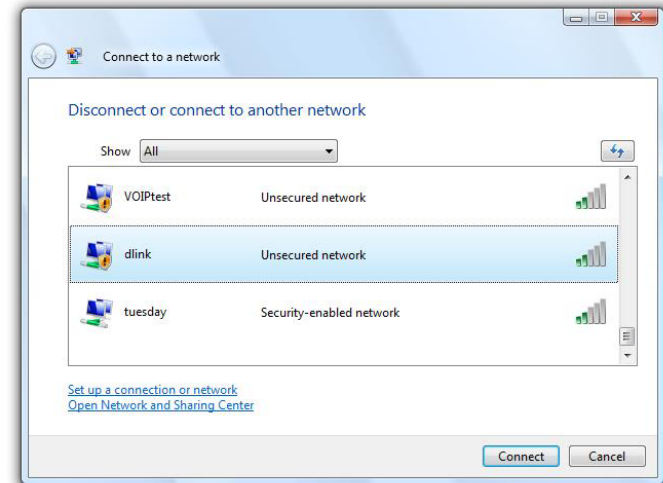
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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

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

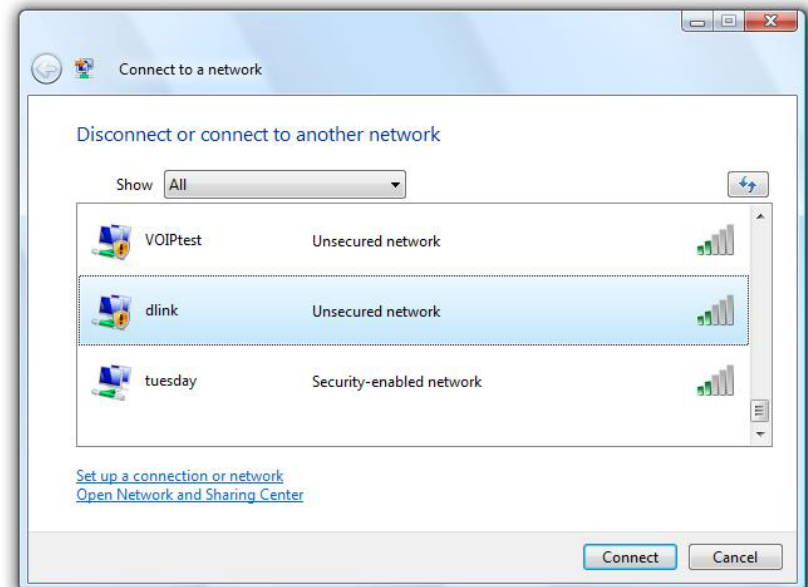
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



WPA/WPA2

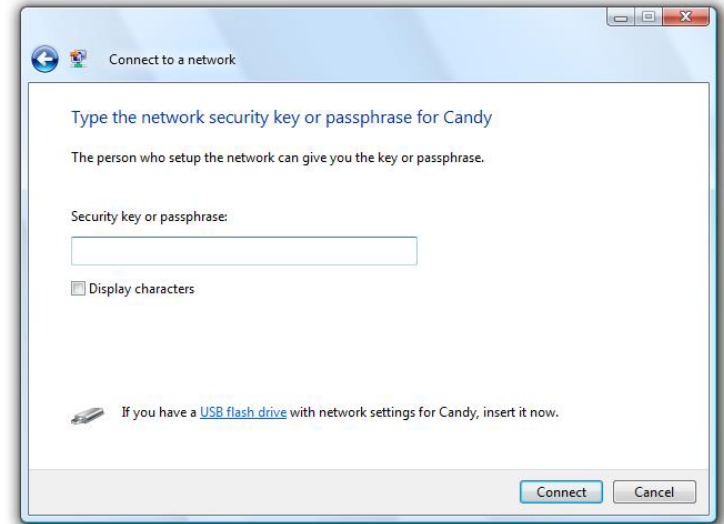
It is recommended to enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Open the Windows Vista® Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.
2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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

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

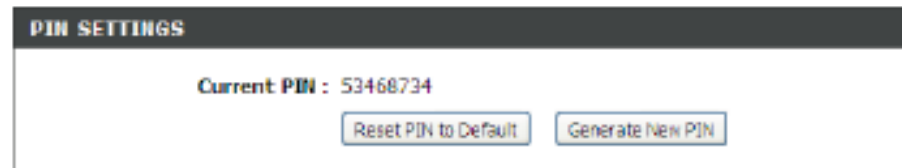


WPS/WCN 2.0

The router supports Wi-Fi protection, referred to as WCN 2.0 in Windows Vista®. The following instructions for setting this up depends on whether you are using Windows Vista® to configure the router or third party software.

When you first set up the router, Wi-Fi protection is disabled and unconfigured. To enjoy the benefits of Wi-Fi protection, the router must be both enabled and configured. There are three basic methods to accomplish this: use Windows Vista's built-in support for WCN 2.0, use software provided by a third party, or manually configure.

If you are running Windows Vista®, log into the router and click the **Enable** checkbox in the **Basic > Wireless** section. Use the Current PIN that is displayed on the **Advanced > Wi-Fi Protected Setup** section or choose to click the **Generate New PIN** button or **Reset PIN to Default** button.



If you are using third party software to set up Wi-Fi Protection, carefully follow the directions. When you are finished, proceed to the next section to set up the newly-configured router.

Windows® XP

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

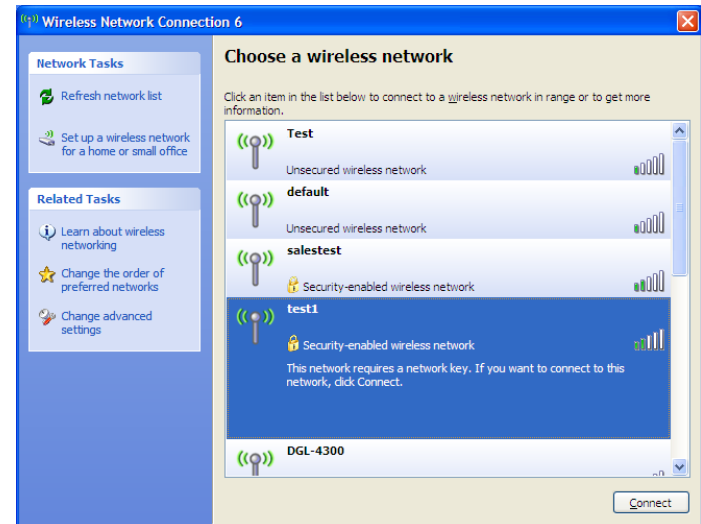
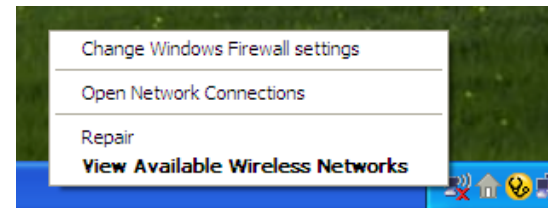
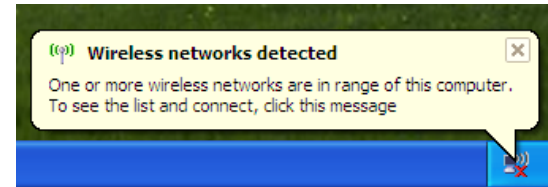
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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

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

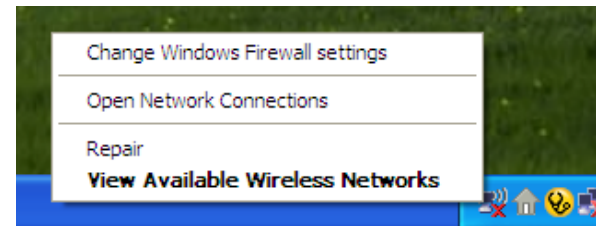
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



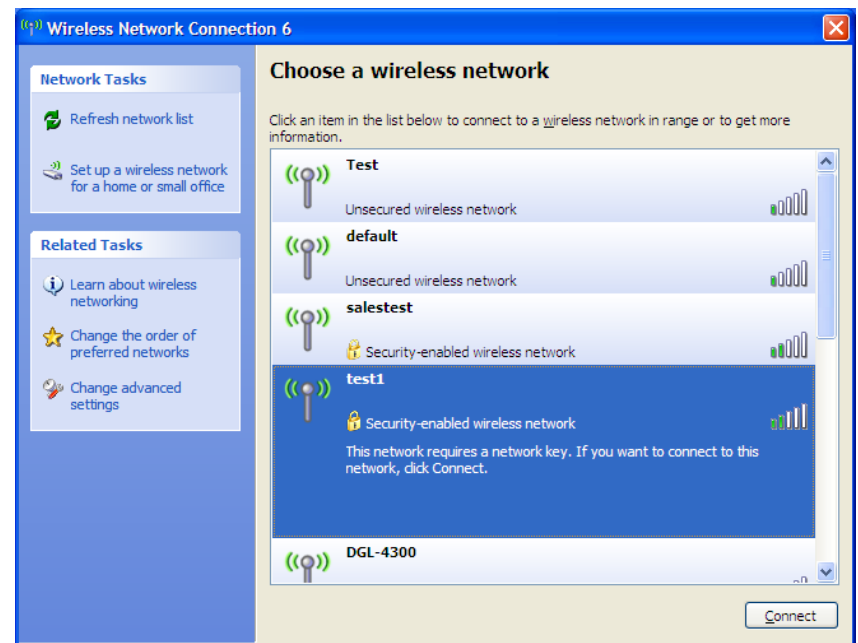
WPA/WPA2

It is recommended to enable WPA 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 WPA key being used.

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

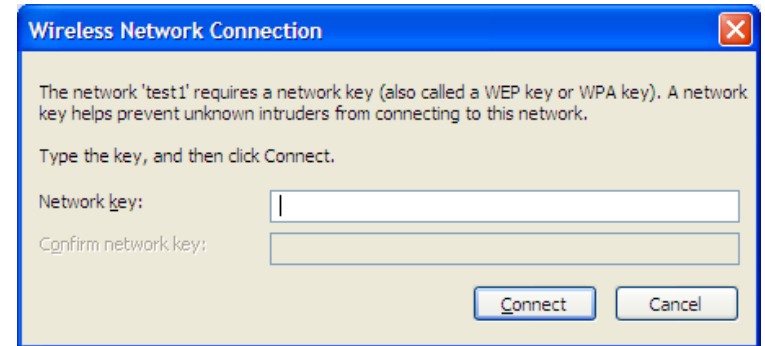


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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

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



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-860L. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.

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

When entering the IP address of the D-Link router (192.168.0.1 for example), you are not connecting to a website 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® 7 and higher
 - Mozilla Firefox 3.5 and higher
 - Google™ Chrome 8 and higher
 - Apple Safari 4 and higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any Internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

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

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

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

To reset the router, locate the reset button (hole) on the bottom 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. To re-configure the router, refer to page 13.



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

If you are having a problem sending or receiving e-mail, 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, let's say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

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

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

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure**.
- To change the MTU enter the number in the MTU field and click **Save Settings** to save your settings.
- Test your e-mail. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

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

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

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

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

What is Wireless?

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

Why D-Link Wireless?

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

How does wireless work?

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

Wireless Local Area Network (WLAN)

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

Wireless Personal Area Network (WPAN)

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

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

Who uses wireless?

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

Home

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

Small Office and Home Office

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

Where is wireless used?

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

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

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

Tips

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

Centralize your router or Access Point

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

Eliminate Interference

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

Security

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

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DIR-860L wireless network Cardbus adapters.

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

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

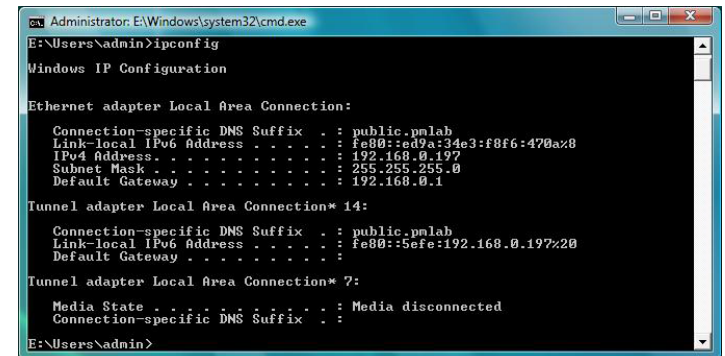
Networking Basics

Check your IP address

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

Windows® 8 Users

- Press the **Windows key** and **R** together. Type **cmd** in the box and click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and default gateway of your adapter.



```
Administrator: E:\Windows\system32\cmd.exe
E:\Users\Admin>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : public.pmlab
    Link-local IPv6 Address . . . . . : fe80::ed9a:34e3:f8f6:470a%8
    IPv4 Address. . . . . : 192.168.0.197
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

Tunnel adapter Local Area Connection* 14:

    Connection-specific DNS Suffix  . : public.pmlab
    Link-local IPv6 Address . . . . . : fe80::5efe:192.168.0.197%20
    Default Gateway . . . . . :

Tunnel adapter Local Area Connection* 7:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

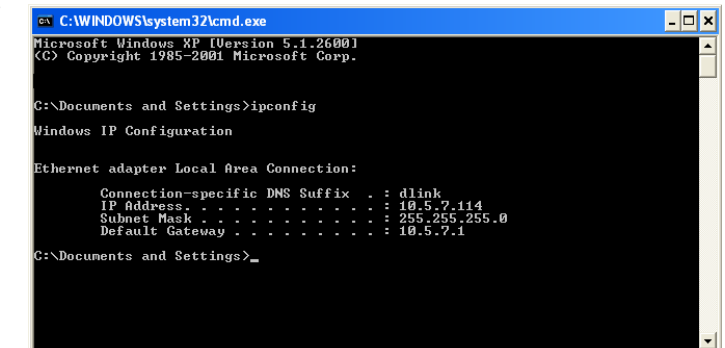
E:\Users\Admin>
```

Windows® 7/Vista® Users

- Click **Start**, type **cmd** in the search box and then click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and default gateway of your adapter.

Windows® XP Users

- Click on **Start > Run**. In the run box type **cmd** and click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and the default gateway of your adapter.



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>
```

If 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:

Windows® 8 Users

- Press the **Windows** key and then type **IP**. Click **Settings** on the right side and then click **View Network Connections**.
- Right-click on the adapter which represents your D-Link wireless network adapter.

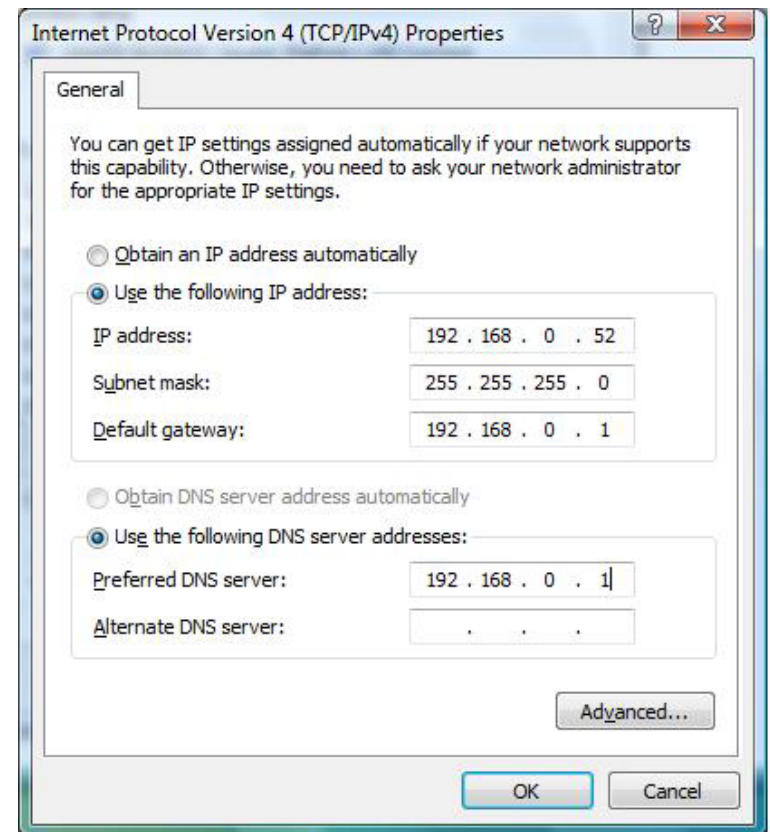
- Highlight **Internet Protocol Version 4 (TCP /IPv4)** and click **Properties**.

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

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

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.
- Set **Primary DNS** the same as the LAN IP address of your router or gateway.
- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).

- Click **OK** to save your settings.



Windows® 7/ Vista® Users

- Click on **Start > Control Panel** (make sure you are in Classic View). Double-click on the **Network and Sharing Center** icon. If you are using Windows Vista, click on **Manage network connections** along the left panel in the window. For Windows® 7, click on **Change adapter settings**.

- Right-click on the **Local Area Connection** which represents your D-Link wireless network adapter which will be connected to your network.

- Highlight **Internet Protocol Version 4 (TCP /IPv4)** and click **Properties**.

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

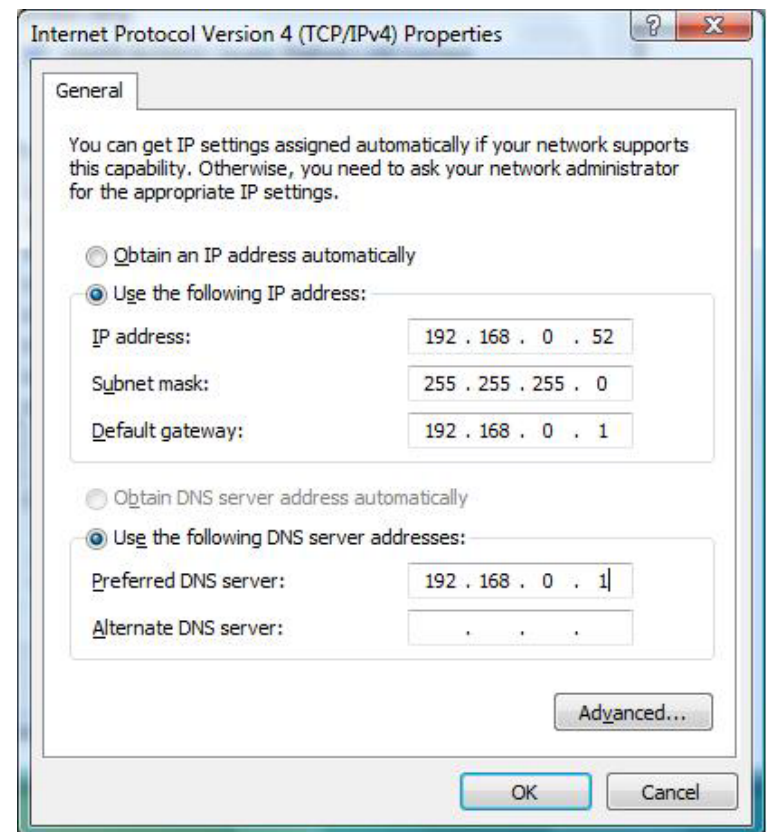
Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network.

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.

- Set **Primary DNS** the same as the LAN IP address of your router or gateway.

- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).

- Click **OK** to save your settings.

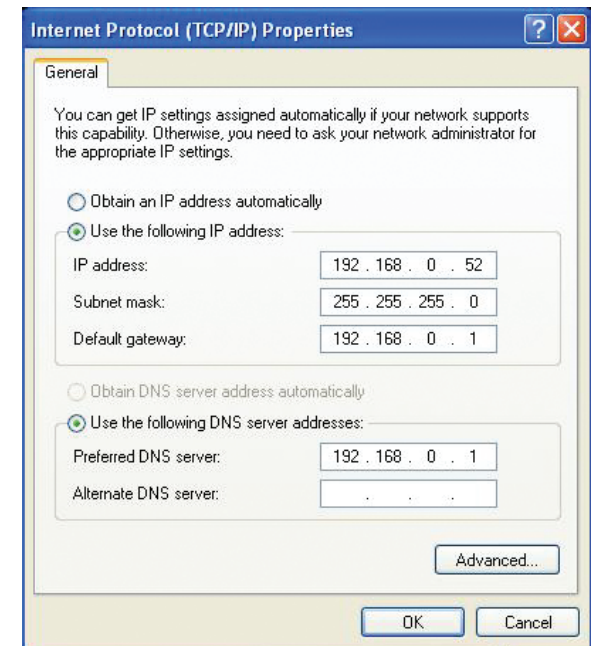


Windows® XP Users

- Click on **Start > Control Panel**. Make sure you are in Classic View. Double-click on the Network Connections icon.
- Right-click on the **Local Area Connection** which represents your D-Link wireless network adapter (or other adapter) which will be connected to your router.
- Highlight **Internet Protocol (TCP/IP)** and click **Properties**.
- Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or LAN IP address on your router.

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

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.
- Set **Primary DNS** as the LAN IP address of your router or gateway.
- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).
- Click **OK** to save your settings.



Technical Specifications

Standards

- IEEE 802.11ac (draft)
- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab

Physical Interface

- 4 Gigabit Ethernet LAN Ports
- 1 Gigabit Ethernet WAN Port
- 1 WPS Push Button
- Reset Button

Wireless Interface

802.11ac (5 GHz)

Radio/Modulation

- BPSK
- QPSK
- 16QAM
- 64QAM
- Up to 256QAM with OFDM

Operating Frequency

- 5.150GHz ~ 5.250GHz
- 5.725GHz ~ 5.850GHz

Media Access Protocol

- CSMA/CA with ACK

802.11n

Radio/Modulation

- BPSK
- QPSK
- 16QAM
- 64QAM with OFDM

Operating Frequency

5GHz Band:

- 5.180GHz ~ 5.320GHz
- 5.745GHz ~ 5.825GHz

2.4GHz ISM Band:

- 2.400GHz ~ 2.483GHz ISM Band

Media Access Protocol

- CSMA/CA with ACK

¹ Maximum wireless signal rate derived from IEEE Standard 802.11ac (draft), 802.11a, 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 factors will adversely affect wireless signal range.

² Frequency Range varies depending on country's regulation.

802.11g

Radio/Modulation

- BPSK
- QPSK
- 16QAM
- 64QAM with OFDM

Operating Frequency

2.400 GHz ~ 2.483GHz ISM Band

Media Access Protocol

- CSMA/CA with ACK

802.11a

Radio/Modulation

- BPSK
- QPSK
- 16QAM
- 64QAM with OFDM

Operating Frequency

- 5.180GHz ~ 5.320GHz
- 5.745GHz ~ 5.825GHz

Media Access Protocol

- CSMA/CA with ACK

Security

- Wi-Fi Protected Access (WPA/WPA2)
- WPS™

LEDs

- Power/WPS
- Internet

Power

- DC 12V/2.5A

Operating Temperature

- 30° to 104° F (0° to 40° C)

Operating Humidity

- 10% to 90% non-condensing

Certifications

- CE
- FCC
- IC
- C-Tick
- CSA international

Dimensions

- 4.5" x 3.9" x 7.6"

Weight

- 0.77 lb

Warranty

- 1-Year Limited Warranty

1 Maximum wireless signal rate derived from IEEE Standard 802.11ac (draft), 802.11a, 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 factors will adversely affect wireless signal range.

2 Frequency Range varies depending on country's regulation.

Contacting Technical Support

U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

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

- Model number of the product (e.g. DIR-860L)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the router).

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

For customers within the United States:

Phone Support:

(877) 453-5465

Internet Support:

<http://support.dlink.com>

For customers within Canada:

Phone Support:

(800) 361-5265

Internet Support:

<http://support.dlink.ca>

GPL Code Statement

This D-Link product includes software code developed by third parties, including software code subject to the GNU General Public License (“GPL”) or GNU Lesser General Public License (“LGPL”). As applicable, the terms of the GPL and LGPL, and information on obtaining access to the GPL code and LGPL code used in this product, are available to you at:

<http://tsd.dlink.com.tw/GPL.asp>

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WRITTEN OFFER FOR GPL AND LGPL SOURCE CODE

Where such specific license terms entitle you to the source code of such software, D-Link will provide upon written request via email and/or traditional paper mail the applicable GPL and LGPL source code files via CD-ROM for a nominal cost to cover shipping and media charges as allowed under the GPL and LGPL.

Please direct all inquiries to:
Email: GPLCODE@DLink.com
Snail Mail:
Attn: GPLSOURCE REQUEST
D-Link Systems, Inc.
17595 Mt. Herrmann Street
Fountain Valley, CA 92708

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Preamble

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- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
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- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
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Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

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

Limited Warranty:

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

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

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

Limited Software Warranty:

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

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

Submitting A Claim (USA):

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

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization (“RMA”) number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery (“COD”) is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link’s reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

Submitting A Claim (Canada):

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

- Customers need to provide their receipt (proof of purchase) even if the product is registered. Without a receipt, no warranty service will be done. The registration is not considered a proof of purchase.
- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-800-361-5265, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization (“RMA”) number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.ca/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery (“COD”) is allowed. Products sent COD will be rejected by D-Link. Products shall be fully insured by the customer and shipped to D-Link Networks, Inc., 2525 Meadowvale Boulevard Mississauga, Ontario, L5N 5S2 Canada. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via Purolator Canada or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link’s reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.
- RMA phone number: 1-800-361-5265 Hours of Operation: Monday-Friday, 9:00AM – 9:00PM EST

What Is Not Covered:

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

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

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

Disclaimer of Other Warranties:

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

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

Limitation of Liability:

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

Governing Law:

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

Trademarks:

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Copyright Statement:

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CE Mark Warning:

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

FCC Statement:

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution:

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

Operations in the 5.15-5.25GHz / 5.470 ~ 5.725GHz band are restricted to indoor usage only.

IMPORTANT NOTICE:**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. To maintain compliance with FCC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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

ICC Notice:

Operation is subject to the following two conditions:

- 1) This device may not cause interference and
- 2) This device must accept any interference, including interference that may cause undesired operation of the device.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- (i) The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems;
- (ii) The maximum antenna gain (2dBi) permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

In addition, users should also be cautioned to take note that high-power radars are allocated as primary users (meaning they have priority) of the bands 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

Règlement d'Industry Canada

Les conditions de fonctionnement sont sujettes à deux conditions:

- (1) Ce périphérique ne doit pas causer d'interférence et.
- (2) Ce périphérique doit accepter toute interférence, y compris les interférences pouvant perturber le bon fonctionnement de ce périphérique.

Registration

Register your product online at registration.dlink.com



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

Version 1.0
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