D-Link®

Version 1.0 | 04/11/2012

User Manual

Wirless N 150 Home Cloud Router

DIR-600L

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 11, 2012	• Initial release

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Table of Contents

Preface i
Manual Revisions i
Trademarks i

Package Contents 1
System Requirements 1
Features 2
Hardware Overview 3
Connections 3
LEDs 4

Installation 5
Before you Begin 5
Wireless Installation Considerations 6
Manual Setup 7

Configuration 9
Easy Setup Wizard 9
Web-based Configuration Utility 14
Internet Setup 15
Static (assigned by ISP) 15
Dynamic 16
PPPoE 17
PPTP 18
L2TP 19
Wireless Settings 20
Manual Wireless Setup 21
Wireless Security 22
What is WPA? 22
Wireless Connection Setup Wizard 23
WPA/WPA2-PSK 25
WPA/WPA2-RADIUS 26
LAN Setup 27
DHCP Server Settings 28
DHCP Reservation 29
Time and Date 30
Parental Control 31
Port Forwarding 32
Application Rules 33
MAC Filtering 34
Traffic Control 35
Firewall & DMZ 36
Advanced Wireless 37
Advanced Network 39
Routing 40
Device Administration 41
Save and Restore 42
Firmware Update 43
Language Pack 43
mydlink Pack 43
DDNS Setting 44
System Check 45
Schedules 46

Log Settings....47
Device Info....48
Log....49
Traffic Statistics....50
Active Session....50
Wireless....51
Help....52

Connect a Wireless Client to your Router....53
WPS Button....53
Windows® 7....54
WPA/WPA2....54
WPS....57
Windows Vista®....61
WPA/WPA2....62
WPS/WCN 2.0....64
Windows® XP....65
WPA/WPA2....66

Troubleshooting....68

Wireless Basics....72
What is Wireless?....73
Tips....75
Wireless Modes....76

Networking Basics....77
Check your IP address....77
Statically Assign an IP address....78

Technical Specifications....79

Contacting Technical Support....81

Warranty....82

Registration....89

Package Contents

- D-Link DIR-600L Wireless N 150 Home Cloud Router
- Power Adapter
- Quick Installation Guide
- Ethernet Cable

Note: Using a power supply with a different voltage rating than the one included with the DIR-600L will cause damage and void the warranty for this product.

System Requirements

Network Requirements	• An Ethernet-based Cable or DSL modem • IEEE 802.11n or 802.11g wireless clients • 10/100 Ethernet
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 7 or higher • Firefox 3.5 or higher • Safari 4 or higher • Chrome 8 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.

Features

- **Faster Wireless Networking** - The DIR-600L provides up to 150Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio.

- **Compatible with 802.11b and 802.11g Devices** - The DIR-600L is still fully compatible with the IEEE 802.11b and IEEE 802.11g standard, so it can connect with existing 802.11b and IEEE 802.11g PCI, USB and Cardbus adapters.

- **Cloud Service** - The DIR-600L features a new 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.

- **Easy Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-600L lets you control what information is accessible to those on your wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

* Maximum wireless signal rate derived from IEEE Standard 802.11g 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	LAN Ports (1-4)	Connect 10/100 Ethernet devices such as computers, switches, cameras, and network storage devices (NAS).
2	Internet Port	Connect your broadband modem using an Ethernet cable.
3	Power Receptor	Receptor for the supplied power adapter.
4	Reset Button	Press and hold the reset button for 10 seconds to restore the router to its original factory default settings.

Hardware Overview

LEDs

1	Power LED	A solid light indicates a proper connection to the power supply.
2	Internet LED	A solid light indicates a good connection to the Internet port. This LED blinks during data transmission.
3	Wireless LED	A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.
4	LAN LEDs (1-4)	A solid light indicates a good connection to an Ethernet-enabled device on ports 1-4. This LED blinks during data transmission.
5	WPS Button/LED	Press the WPS button to begin the WPS process. The LED will blink during this process.

Installation

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

Before you Begin

- Please configure the router with the computer that was last connected directly to your modem.
- You can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Internet port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).
- If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

The D-Link wireless router allows 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.

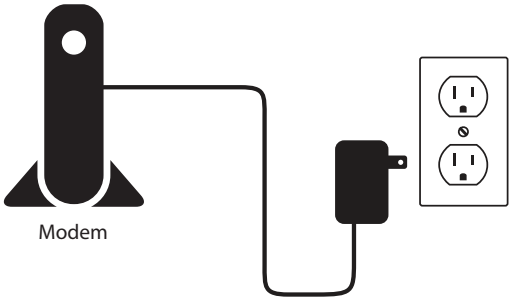
4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

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 in not in use.

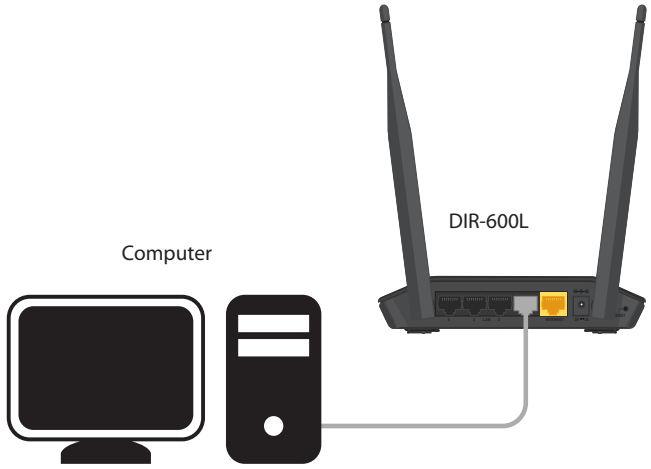
Manual Setup

For best results, place the router in an open area of your intended work area for better wireless coverage. Please use the computer that you are currently connecting to the Internet with.

1. Unplug the power from your modem.

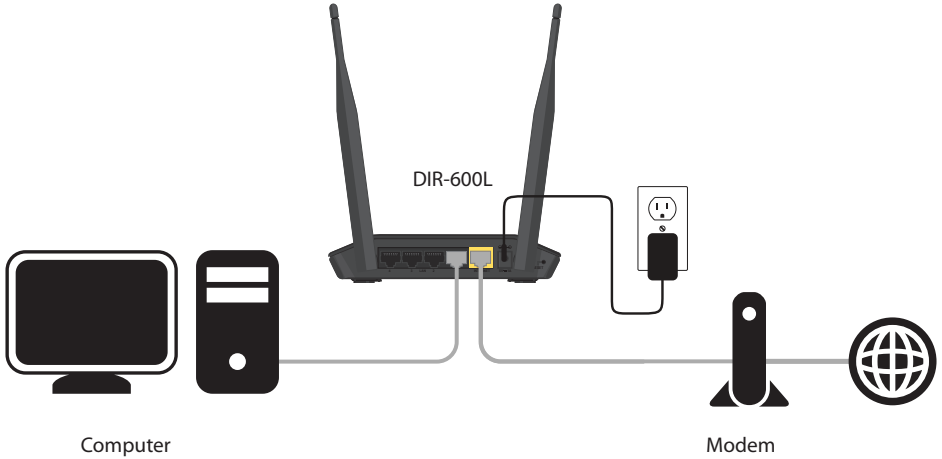


2. Unplug the Ethernet cable from your modem that is connected to your computer. Plug it into the LAN port labeled 1 on the back of your router. The router is now connected to your computer.



3. Use the supplied Ethernet cable and plug it into the port labeled INTERNET on the back of the router. Plug the other end of this cable into the Ethernet port on your modem.

4. Plug the power back into the modem and power it on. Then connect the supplied power adapter into the power receptor on the back of the router and then plug into a power outlet or surge protector. Verify the power light is lit.



5. If you are connecting to a Broadband service that uses a dynamic connection (not PPPoE), you may be online already. Try opening a web browser and enter a web site. If you connect to a web site, you are finished with your Internet setup. Please skip to page 14 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 Easy Setup Wizard (refer to the next page).

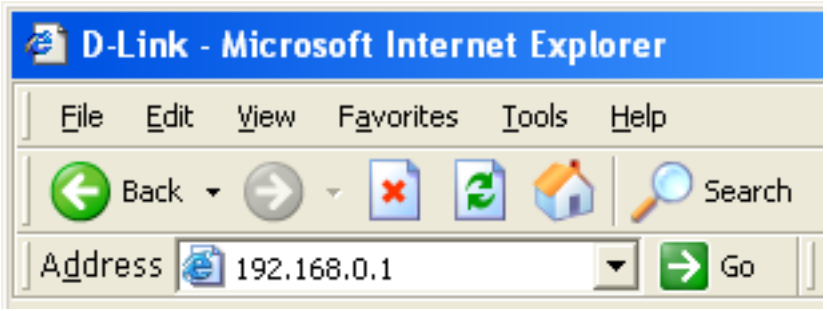
Configuration

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

- **D-Link Easy Setup Wizard** - This wizard will launch if you log into the router for the first time. See below.
- **Manual Setup** - Log into the router and manually configure your router (advanced users only). Refer to page 14.

Easy Setup Wizard

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



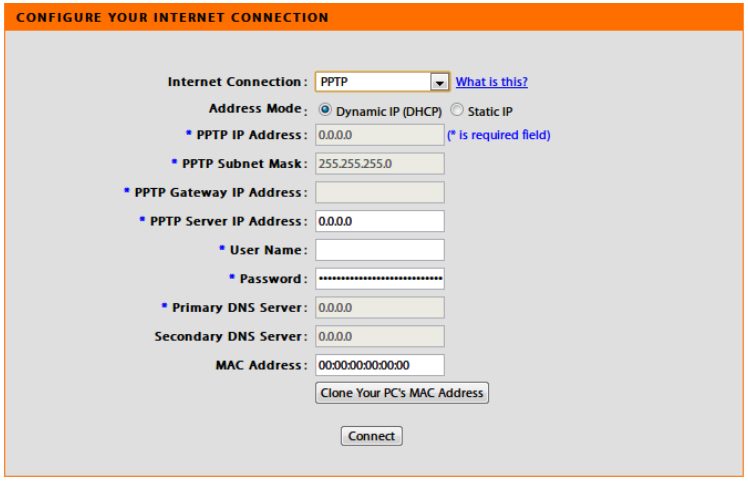
You will be directed to the D-Link Easy Setup Wizard page, which will detect your Internet connection type.

Follow the on-screen instructions to configure your Internet settings. If your Internet connection is using **DHCP**, skip to the next page.

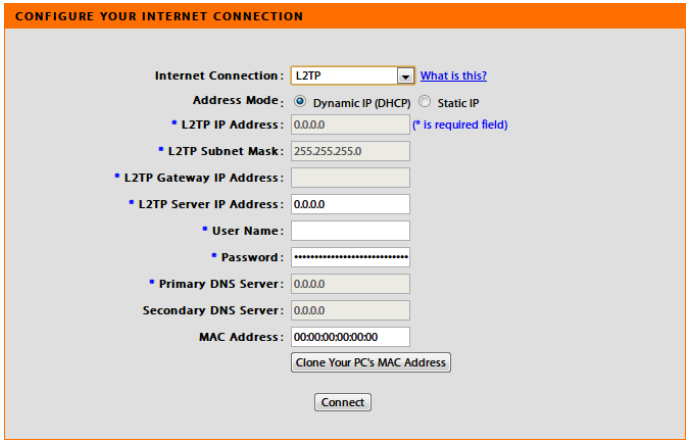
If you are using a **PPPoE** connection, enter your user name and password. Click **Connect**.

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

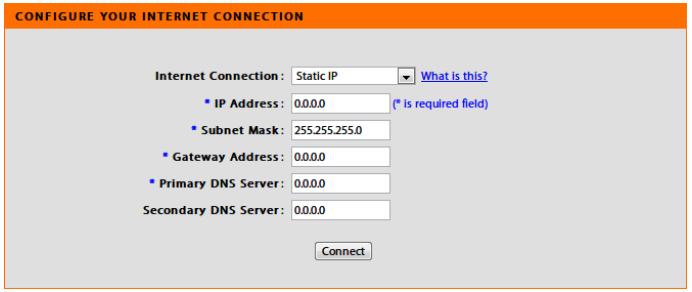
If you selected **PPTP**, enter your PPTP username and password. Click **Next** to continue.



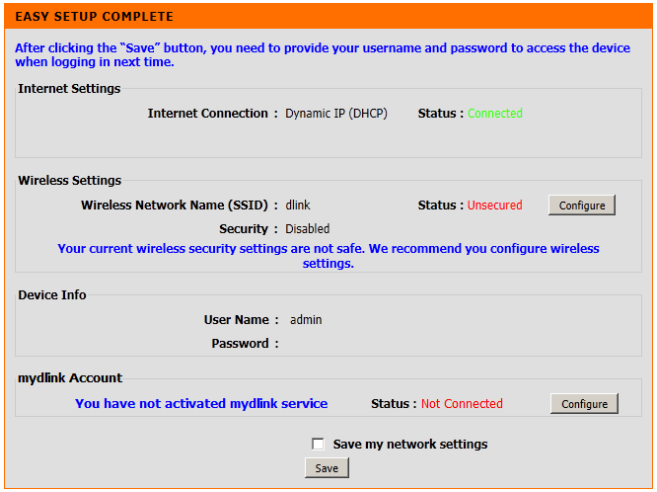
If you selected **L2TP**, enter your L2TP username and password. Click **Next** to continue.



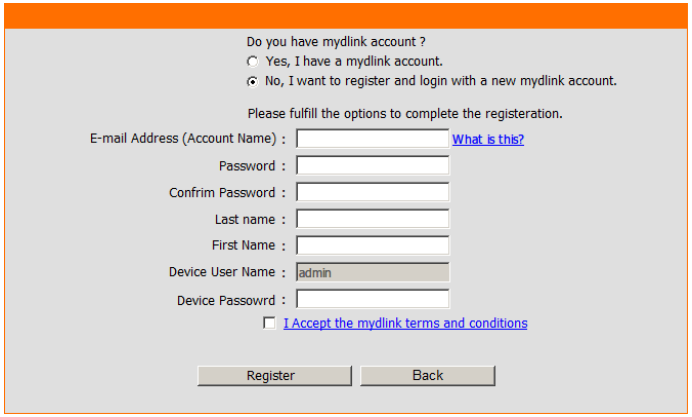
If you selected **Static**, enter your network settings supplied by your Internet provider. Click **Next** to continue.



Once you are connected, the following screen will appear.

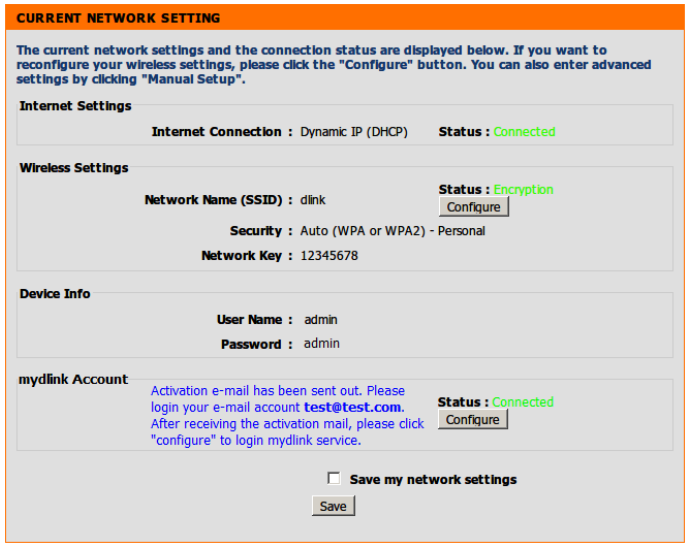


If you have not registered a mydlink account, please click **Configure** under *mydlink Account* and complete the registration form. Once you complete the form, click **Register**.



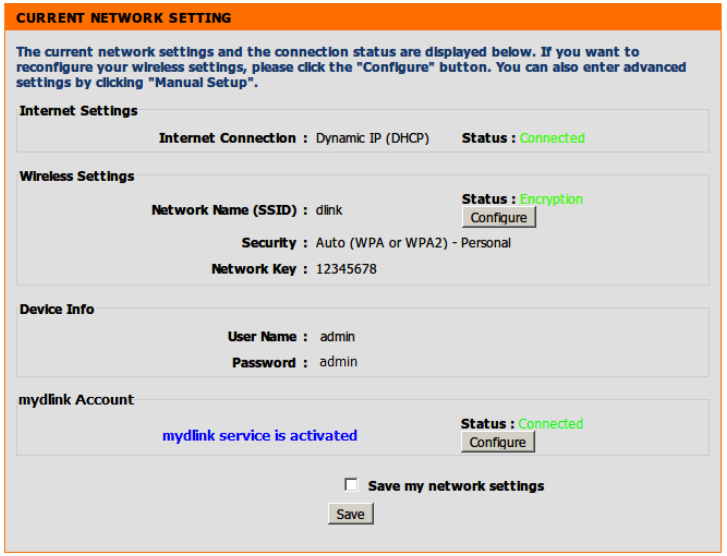
A verification e-mail will be sent to your email account. Open your email (open a new browser window if needed) and read the email from mydlink to finish the registration process.

Once the account verification phase is complete, click **Configure** under *mydlink Account*.



Select **Yes, I have a mydlink account**, enter your information, and click **Login**.

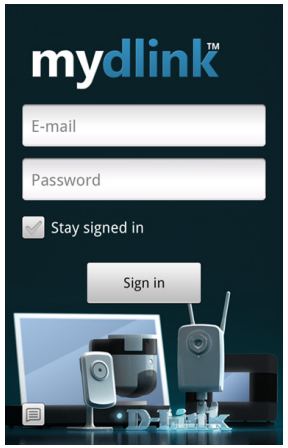
The router has successfully connected to mydlink service.

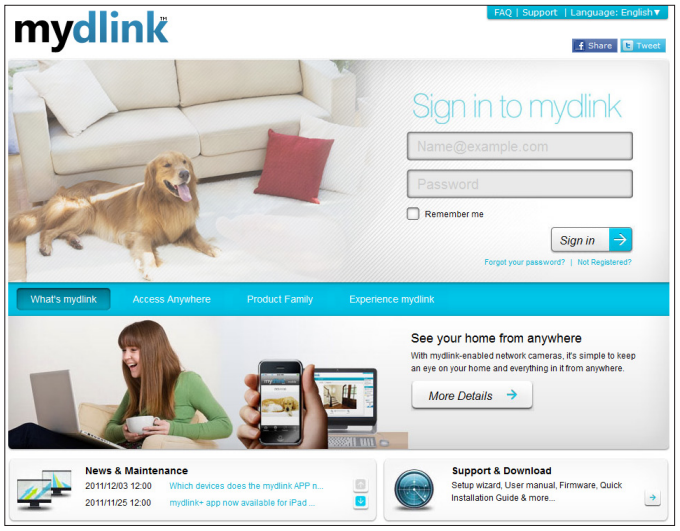


The mydlink App will allow you to receive notices, browse network users, and configure your router from an iPhone/iPad/iPod Touch (iOS 3.0 or higher), Android device (1.6 or higher).

To download the "mydlink lite" app, visit the Apple Store, Android Market.

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





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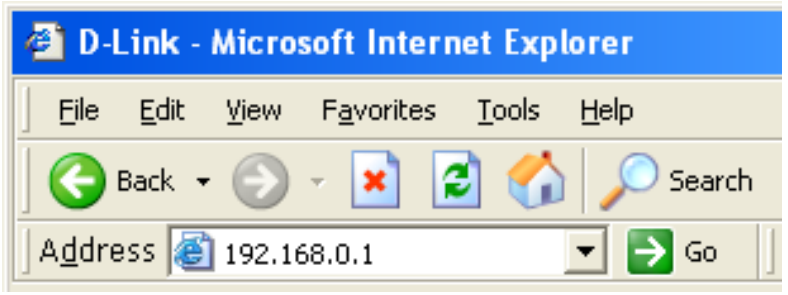
Web-based Configuration Utility

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



Windows and Mac users may also connect by typing **http://dlinkrouter** in the address bar.

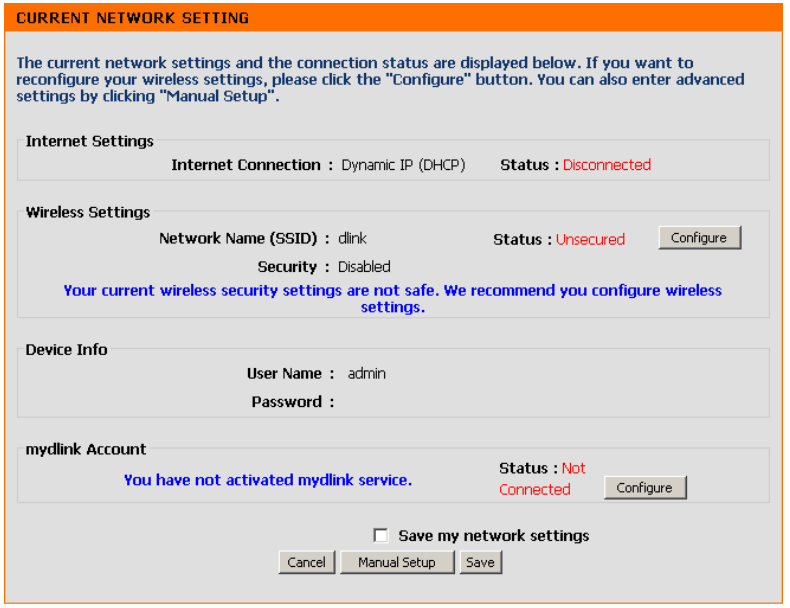
Next to *User Name* enter **Admin** and then enter your password (Leave the password blank by default). Click **Log In** to continue.

The *Current Network Setting* page will display the connection status of the Internet, wireless settings, device information, and your mydlink account status.

To change your wireless settings, click the **Configure** button next under the *Wireless Settings* section. Refer to page 20.

To configure your mydlink account settings, click the **Configure** button next under the *mydlink Account* section.

To manually configure all the settings on the router, click **Manual Setup** at the bottom. You will go to the **Setup** > **Internet Setup** page (refer to the next page).



Internet Setup
Static (assigned by ISP)

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

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

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

Default Gateway: Enter the Gateway assigned by your ISP.

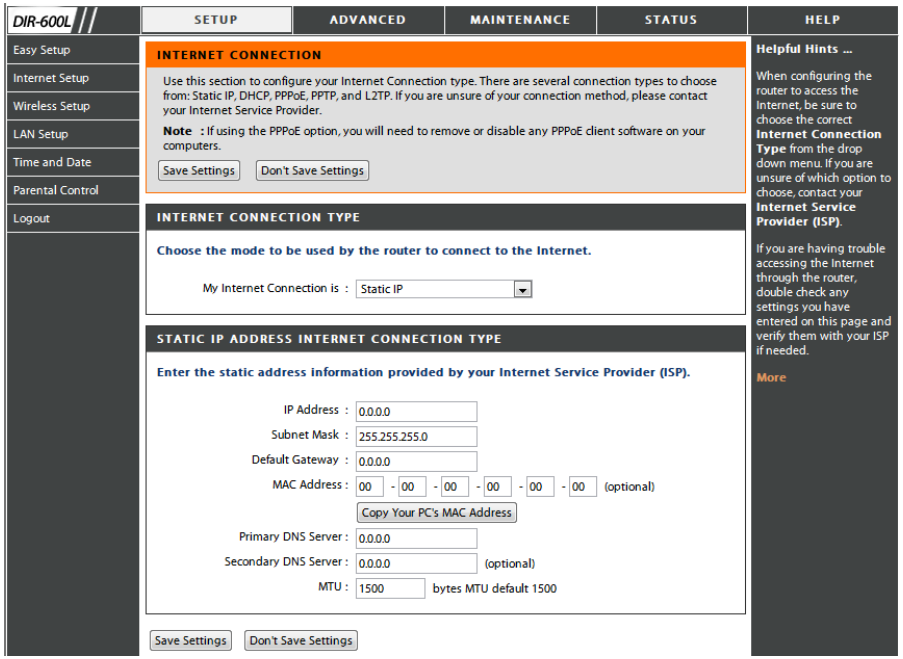
MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router.

Copy Your PC's MAC Address: You can click the **Copy Your PC's MAC Address** button to copy the MAC address of the Ethernet adapter installed in your computer to the router.

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

Secondary DNS Address: Enter the Secondary DNS server IP address. This is optional.

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



Dynamic

Select Dynamic IP (DHCP) to obtain IP Address information automatically from your ISP. Select this option if your ISP did not give you any IP settings to use. This option is most commonly used for cable modem services and some DSL services.

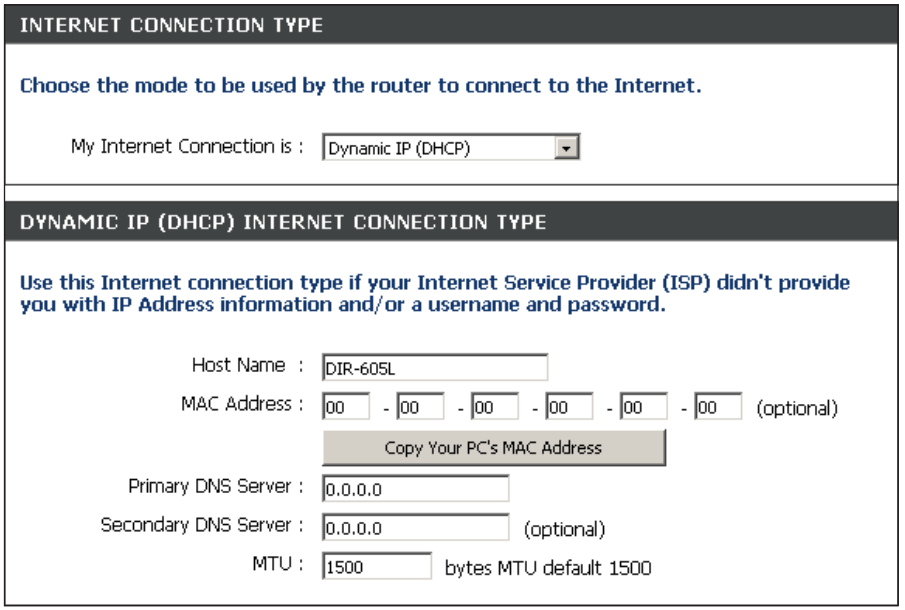
Host Name: The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router.

Copy Your PC's MAC Address: You can click the **Copy Your PC's MAC Address** button to copy the MAC address of the Ethernet adapter installed in your computer to the router.

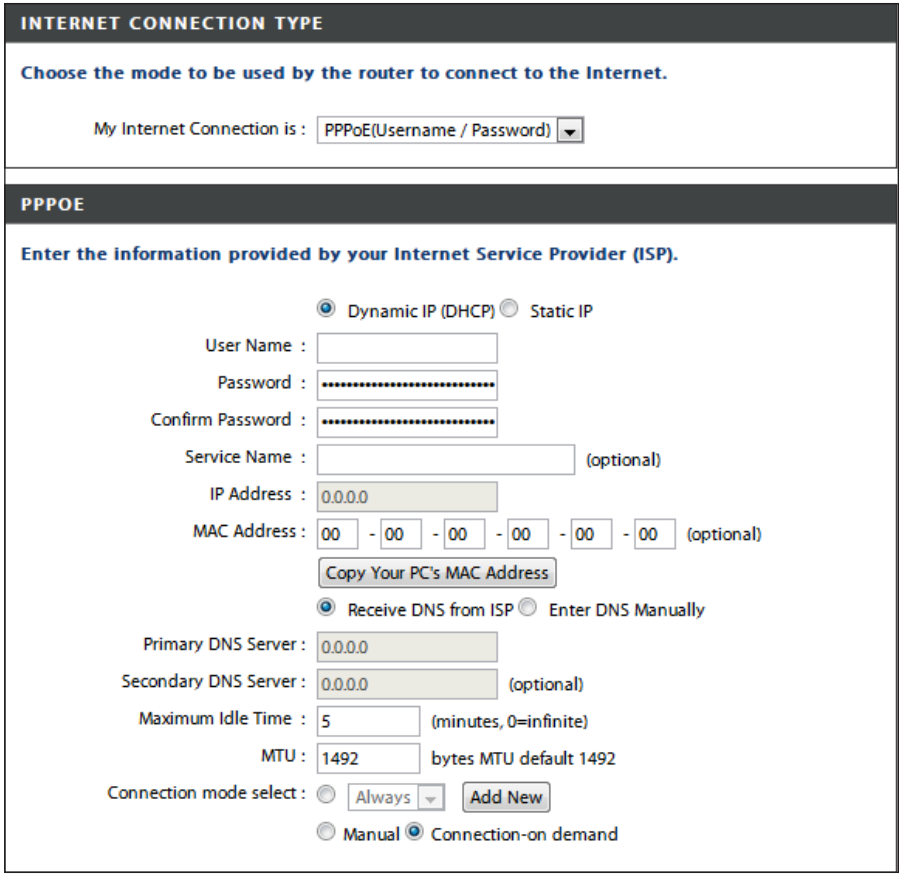
DNS Addresses: These addresses will be assigned automatically from your ISP. You can manually enter DNS servers if you do not want to use what is assigned to you.

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



PPPoE

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



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

User Name: Enter your PPPoE user name.

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

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

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

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router.

Copy Your PC's MAC Address: You can click the **Copy Your PC's MAC Address** button to copy the MAC address of the Ethernet adapter installed in your computer to the router.

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

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

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

Connection Mode Select: Select a schedule or click **Add New** to create a new one. Then select either **Manual** or **Connection on demand**.

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.

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

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

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

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

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

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router.

Copy Your PC's MAC Address: You can click the **Copy Your PC's MAC Address** button to copy the MAC address of the Ethernet adapter installed in your computer to the router.

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

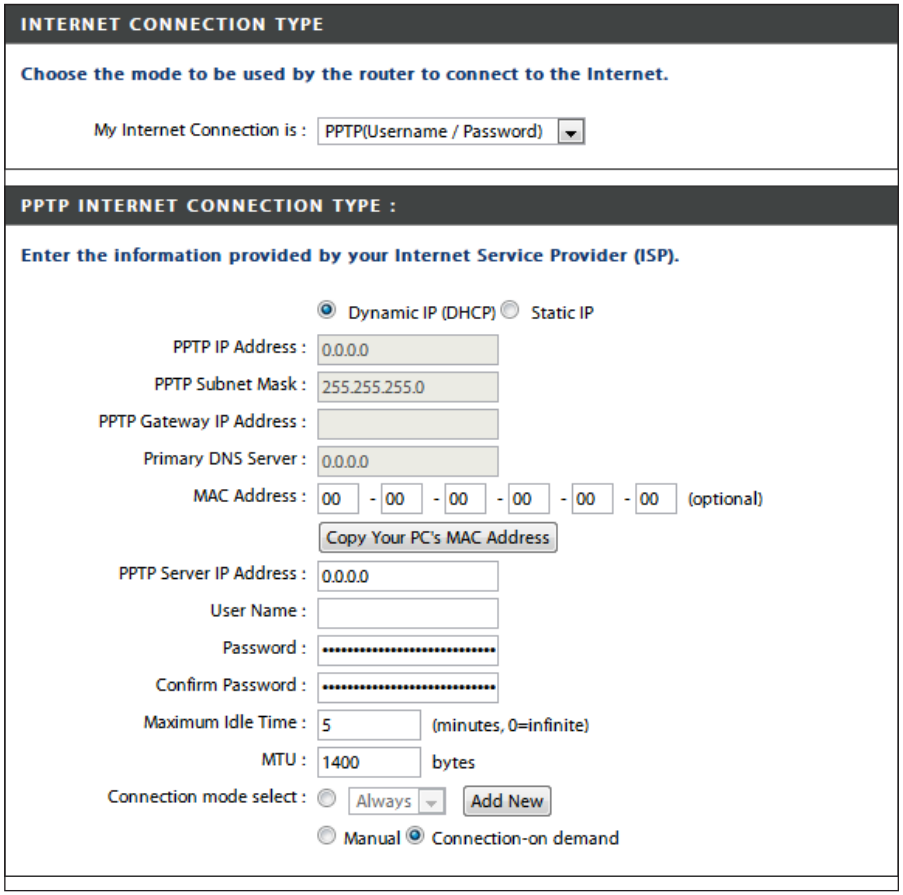
User Name: Enter your PPTP account name.

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

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

MTU: Maximum Transmission Unit - You may need to change the MTU for optimal performance.

Connection Mode Select: Select a schedule or click **Add New** to create a new one. Then select either **Manual** or **Connection on demand**.



L2TP

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

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

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

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

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

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

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router.

Copy Your PC's MAC Address: You can click the **Copy Your PC's MAC Address** button to copy the MAC address of the Ethernet adapter installed in your computer to the router.

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

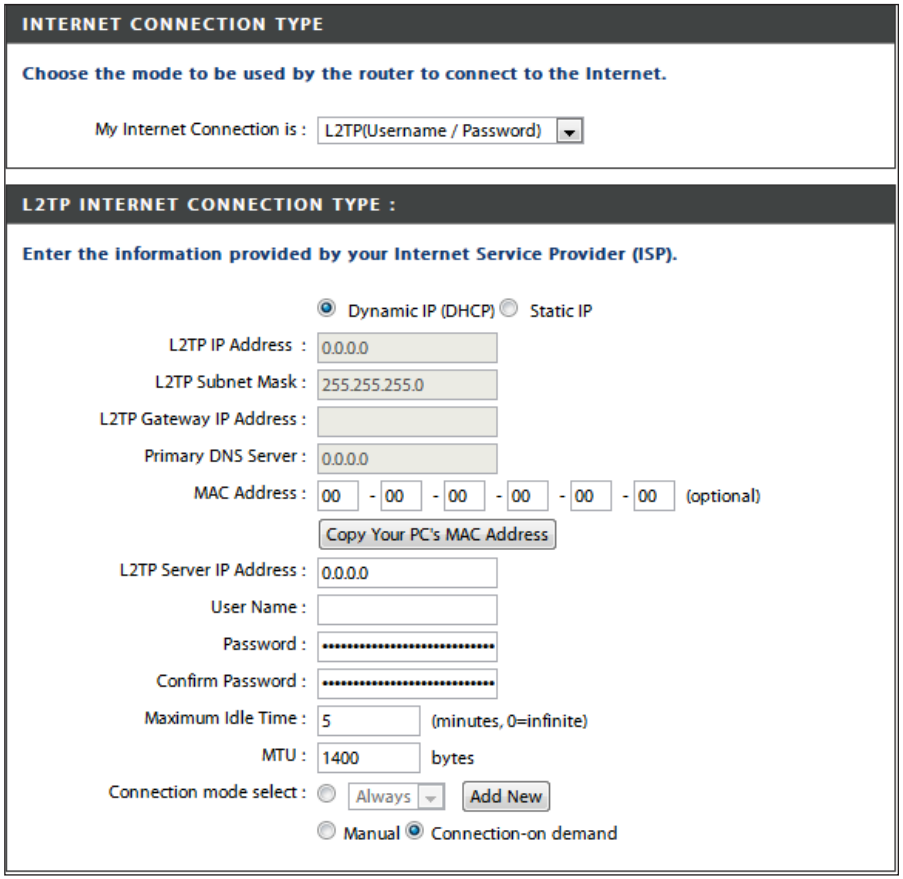
User Name: Enter your L2TP account name.

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

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

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

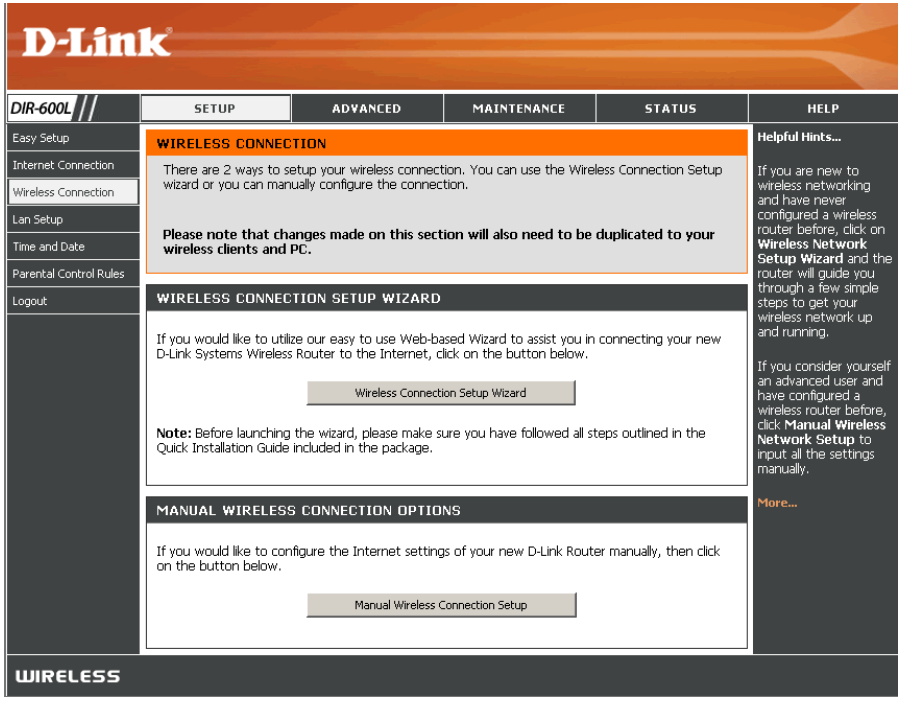
Connection Mode Select: Select a schedule or click **Add New** to create a new one. Then select either **Manual** or **Connection on demand**.



Wireless Settings

If you want to configure the wireless settings on your router using the wizard, click **Wireless Connection Setup Wizard** and skip to page 23.

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



Manual Wireless Setup

Wi-Fi Protected Setup: To enable WPS (WCN 2.0), check the Enable box. Click either **Generate New PIN** or **Reset PIN to Default**, and then configure the Wi-Fi settings below. Please see the Setting Up Wi-Fi Protection (WCN 2.0 in Windows Vista®) section later in this manual for detailed configuration information.

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

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

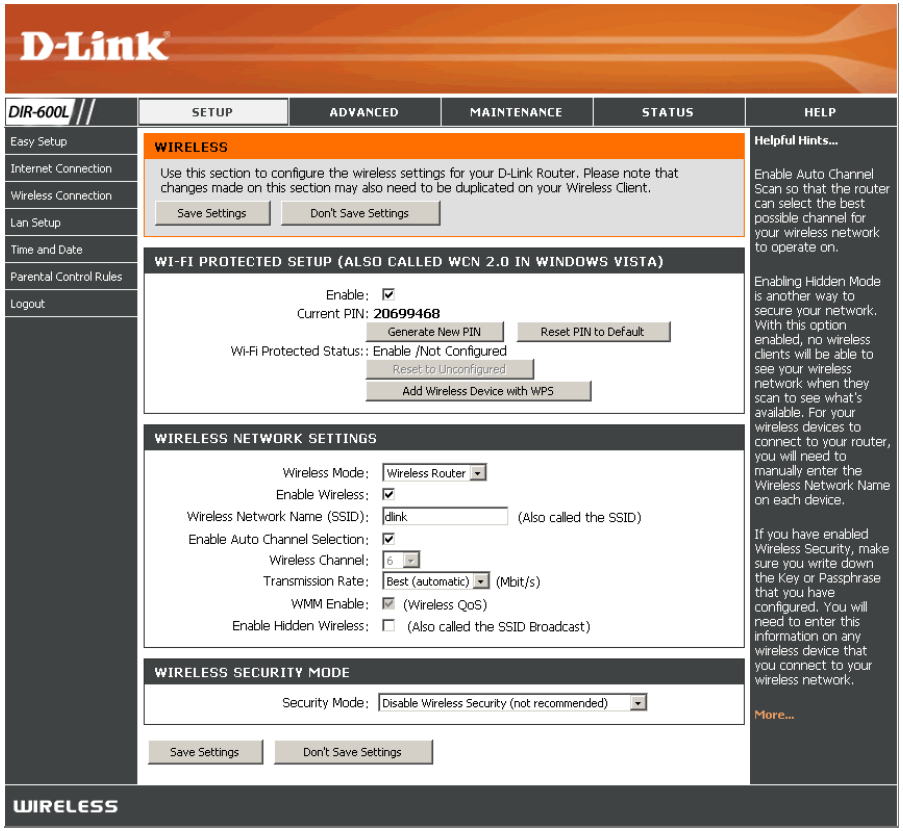
Enable Auto Channel: Check this box to allow the DIR-600L to select the channel with the least amount of interference automatically.

Wireless Channel: Indicates the wireless channel for the router. By default the channel is set to 6. The Channel can be changed to fit the channel setting to customize your wireless network. If you enabled Auto Channel Selection, this option will be greyed out.

Transmission Rate: Use the drop-down menu to select the appropriate Transmission Rate in Mbits per second. Many users will want to use the default setting, *Best (automatic)*.

WMM Enable: Enable Wi-Fi Multimedia to enjoy basic quality of service features. WMM prioritizes traffic according to four access categories: voice, video, best effort, and background.

Enable Hidden Wireless: Check this option if you would not like the SSID of your wireless network to be broadcasted by the DIR-600L. If this option is checked, the SSID of the DIR-600L will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-600L in order to connect to it.



Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-600L 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, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The two 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.

Wireless Connection Setup Wizard

Click **Next** to continue.

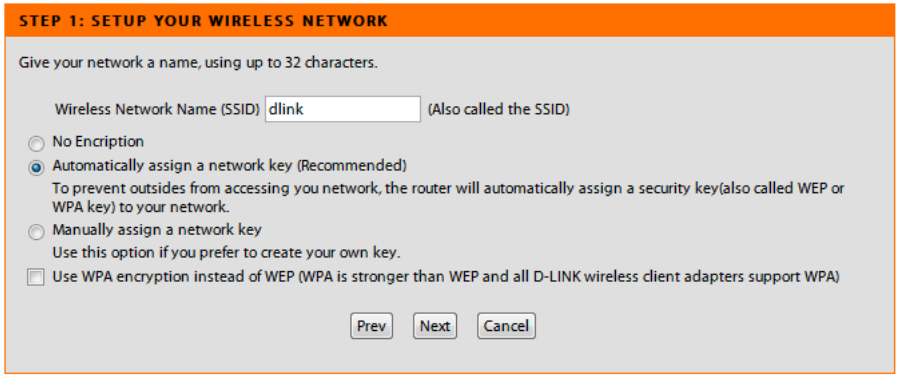
Enter a Wireless Network Name in the box, which is also known as the SSID.

No Encryption: Select this option to disable any encryption/ security on your wireless network (not recommended).

Automatically: Select this option to automatically generate the router's network key.

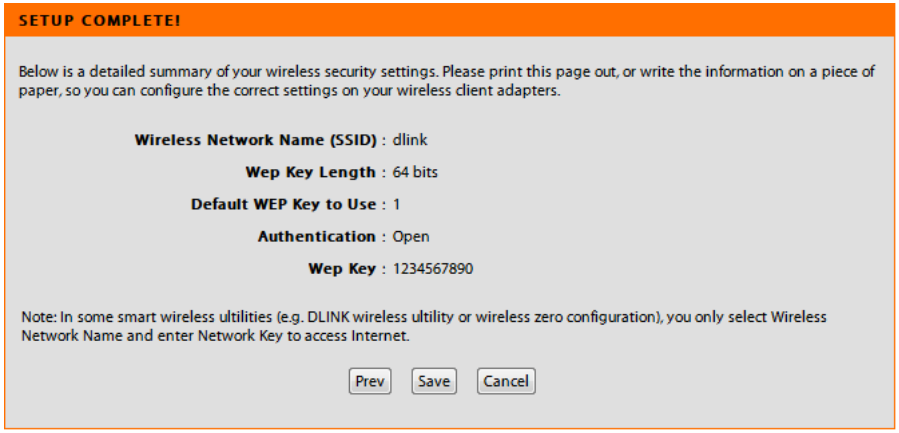
Manually: Select this option to manually enter your network key.

Check the **Use WPA Encryption instead of WEP** box to use WPA instead of WEP encryption (strongly recommended) and click **Next** to continue.



If you selected to manually enter a network key, enter it in the box and then click **Next** to continue. If using WPA, the network key must be between 8-63 characters.

If you selected **Automatically assign a network key**, 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.



The Router will save your new settings and reboot. When it is finished after 1-2 minutes, the opening Wireless Setup window is displayed.

WPA/WPA2-PSK

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Setup** on the left side.

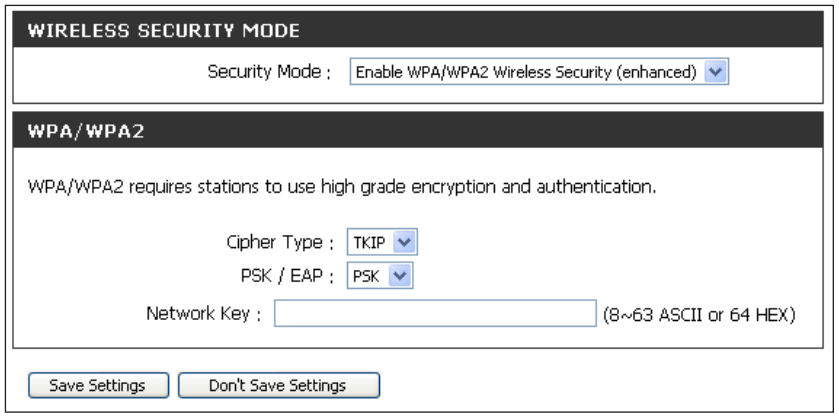
2. Next to **Security Mode**, select *Enable WPA/WPA2 Wireless Security (enhanced)*.

3. Next to **Cipher Mode**, select *TKIP*, *AES*, or *Both*.

4. Next to **PSK/EAP**, select *PSK*.

5. Next to **Network Key**, enter a key (passphrase). The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.

6. 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/WPA2-PSK on your adapter and enter the same passphrase as you did on the Router.



WPA/WPA2-RADIUS

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.

2. Next to **Security Mode**, select *Enable WPA Only Wireless Security (enhanced), Enable WPA2 Only Wireless Security (enhanced),* or *Enable WPA/WPA2 Wireless Security (enhanced)*.

3. Next to **Cipher Type**, select *TKIP*, *AES*, or *Auto*.

4. Next to **PSK/EAP**, select *EAP*.

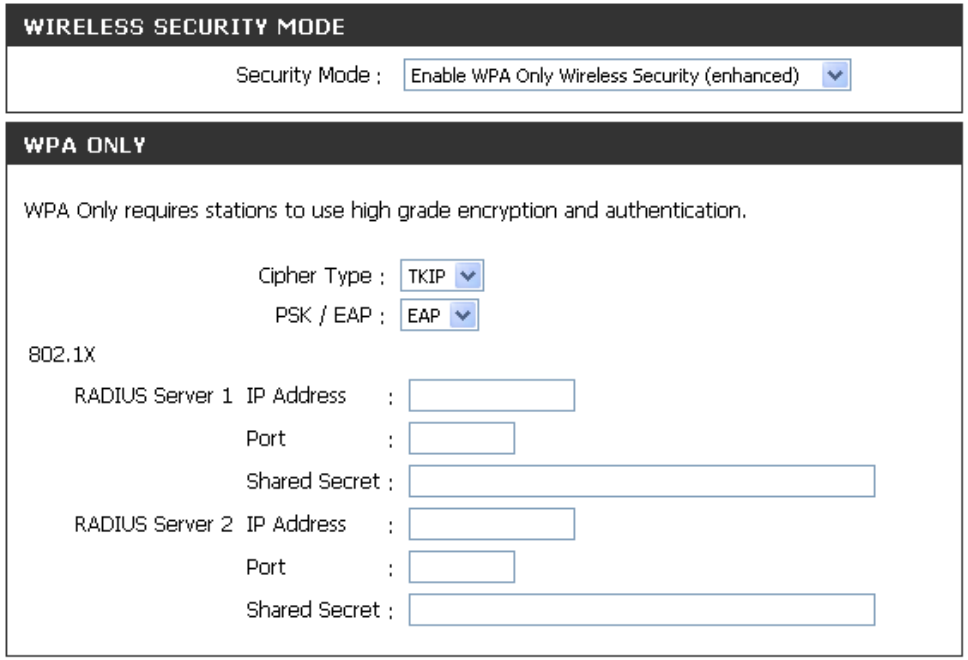
5. Next to **RADIUS Server 1** enter the **IP Address** of your RADIUS server.

6. Next to **Port**, enter the port you are using with your RADIUS server. *1812* is the default port.

7. Next to **Shared Secret**, enter the security key.

8. If you have a secondary RADIUS server, enter its IP address, port, and secret key.

9. Click **Save Settings** to save your settings.



LAN Setup

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

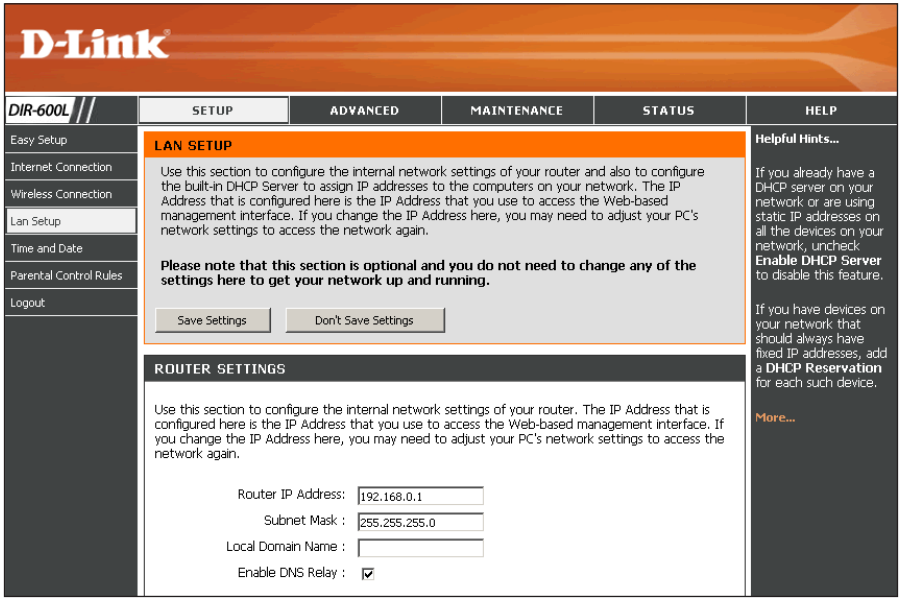
Router IP Address: Enter the IP address of the router. The default IP address is 192.168.0.1.

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

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

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

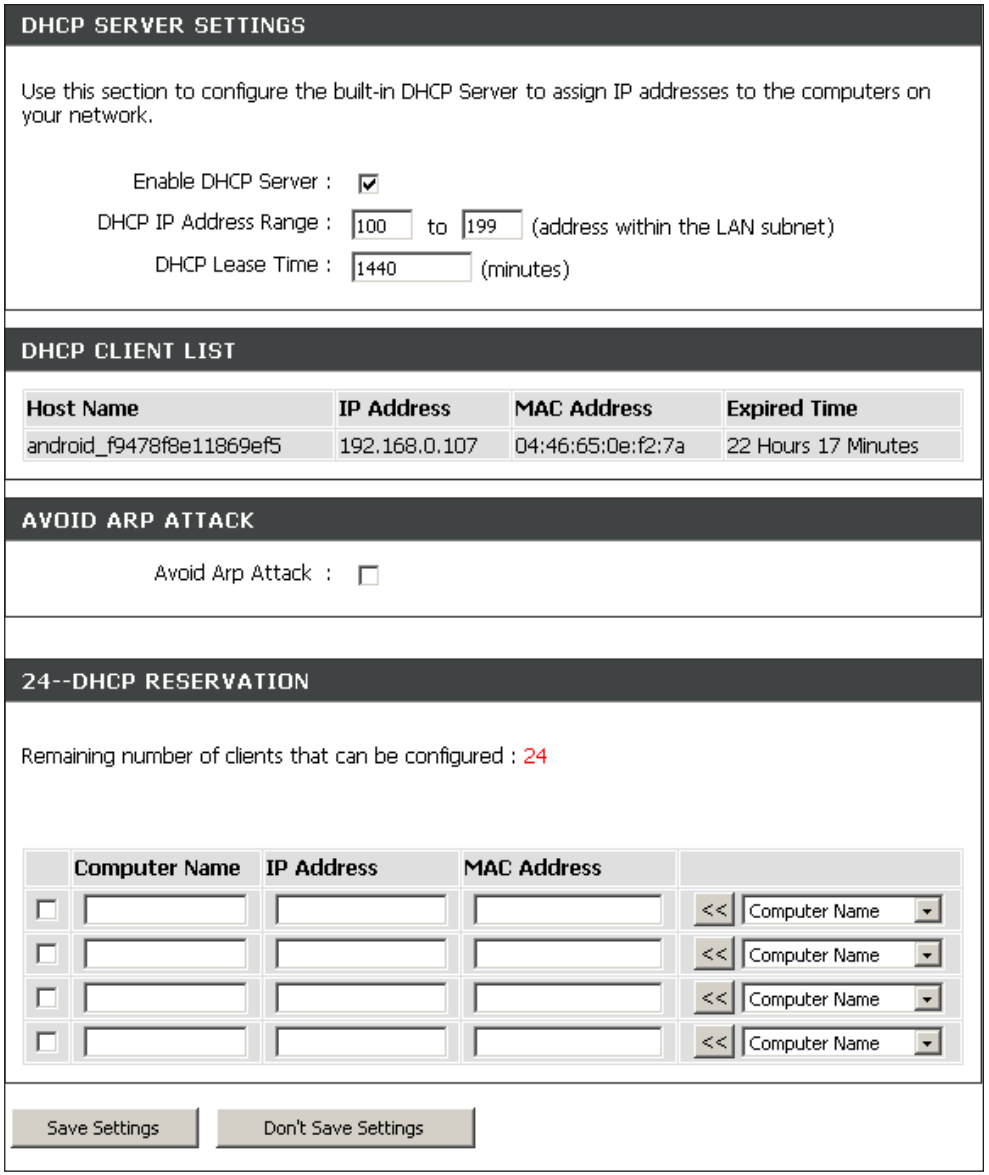
Enable DNS Relay: Check the box to transfer the DNS server information from your ISP to your computers. If unchecked, your computers will use the router for a DNS server.



Refer to the next page for DHCP information.

DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DHCP Server (built-in to the router) will automatically assign an IP address to the computers and devices on your 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-600L. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.



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

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

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 (default setting is 1440).

DHCP Client List: Displays the name, IP address, MAC Address, and lease time of devices currently assigned IP settings by the router.

Avoid ARP Attack: Check to defend against ARP spoofing (ARP poison routing) attacks to your local network.

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 that this IP address must be within the DHCP IP Address Range.

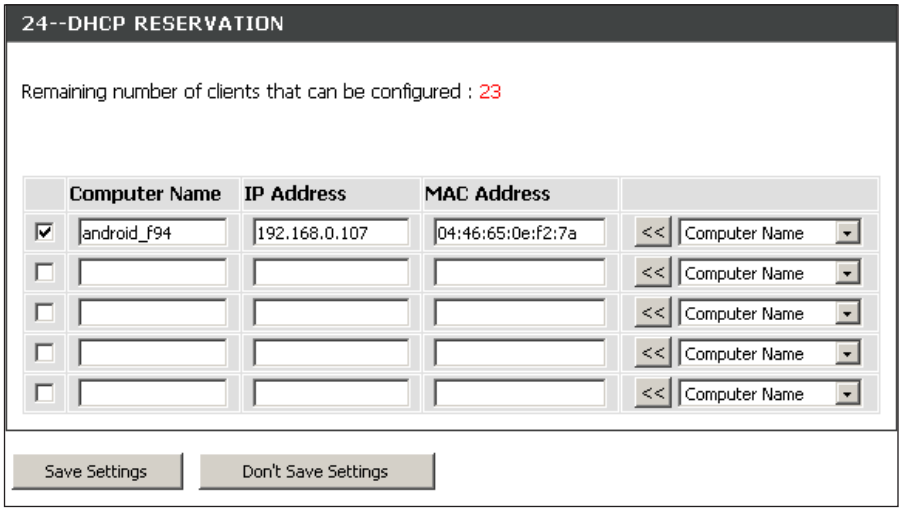
Enable: Check this box to enable the reservation.

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. If you want to assign an IP address to the computer you are currently on, click this button to populate the fields.

Save Settings: Click **Save Settings** to save your entry.



Time and Date

This section will allow you to configure, update, and maintain the correct time on the internal system clock.

Time: Displays the current time and date.

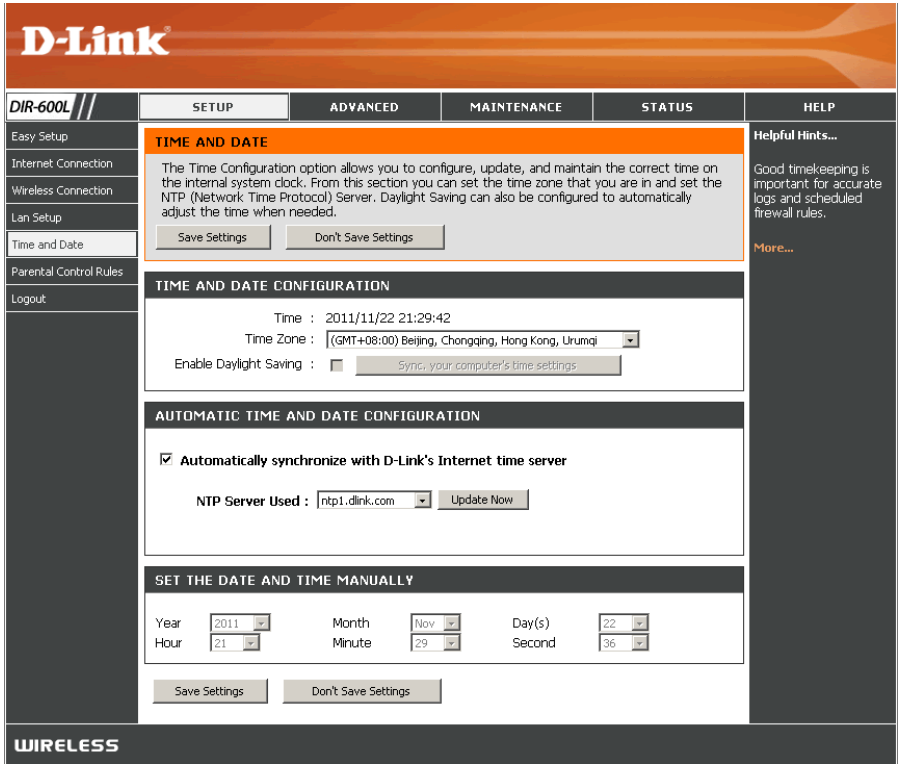
Time Zone: Select the Time Zone from the drop-down menu.

Enable Daylight Saving: Checking this checkbox enables Daylight Saving time.

Sync. you computer's time settings: Click **Sync. your computer's time settings** to copy your PC's time settings to the router.

NTP Server Used: Click the "Automatically synchronize with D-Link's Internet time server" checkbox and then use the drop-down menu to select an NTP Server. NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers.

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. Click **Save Settings**.



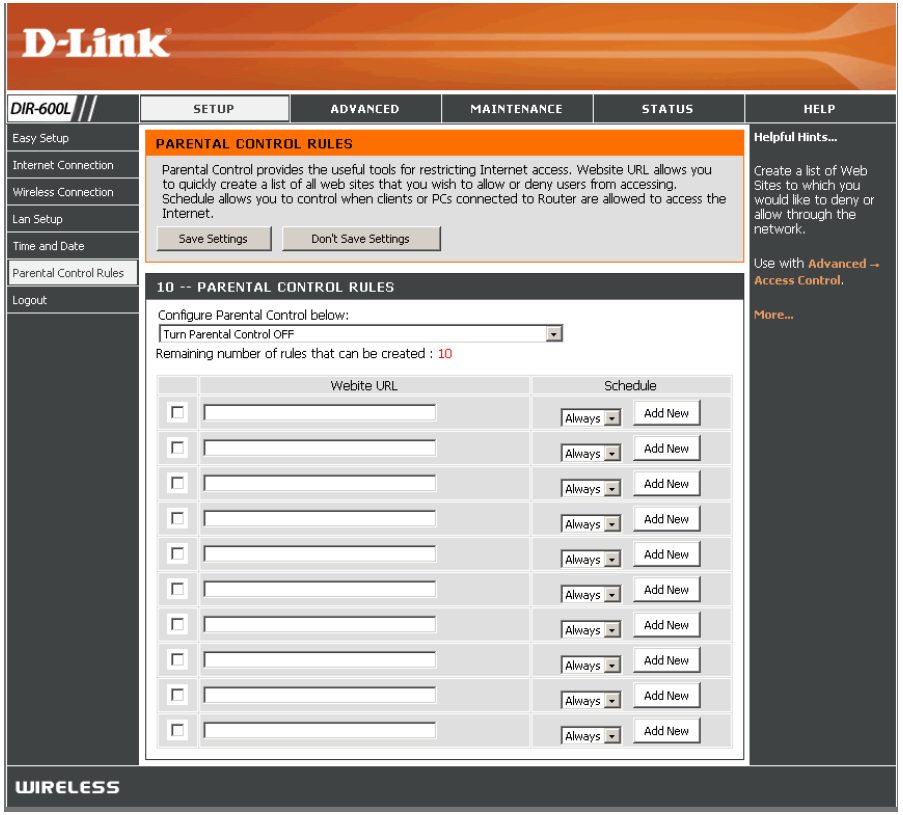
Parental Control

This feature allows you to create a list of websites that you want to either allow or deny users access.

Configure Parental Control: Select **Turn Parental Control OFF**, **Turn Parental Control ON and ALLOW computers access to ONLY these sites**, or **Turn Parental Control ON and DENY computers access to ONLY these sites**.

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

Schedule: The schedule of time when the parental control filter 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 **Maintenance** > **Schedules** section.



Port Forwarding

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

Enable: Check the box to enabled the rule.

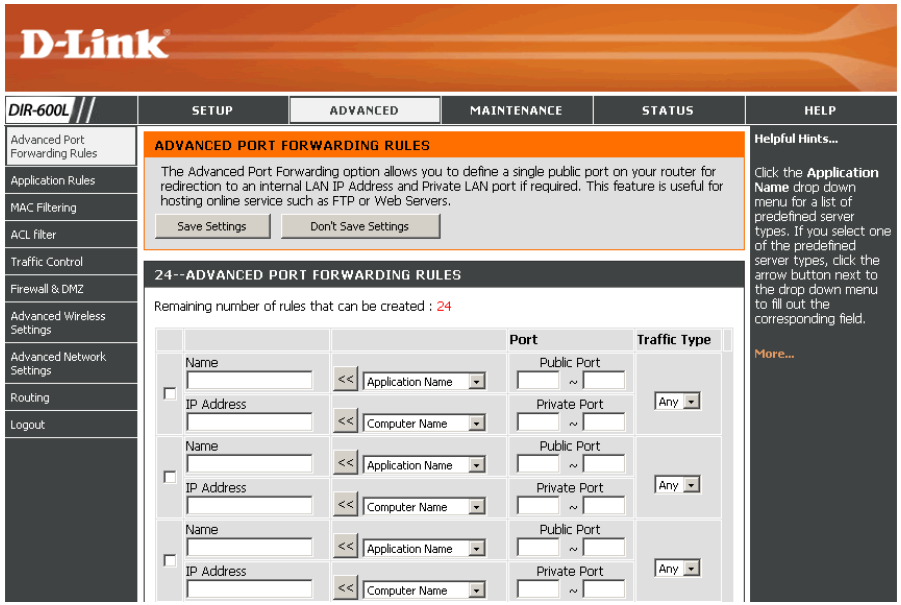
Name: Enter a name for the rule.

Application Name: You may select a pre-defined rule from the drop-down menu. Select a rule and then click << to populate the required fields.

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

Start Port/ End Port: Enter the port or range of ports that you want to open. If you want to open one port, enter the same port in both boxes. In most cases the Public and Private ports will be exactly the same.

Traffic Type: Select **TCP**, **UDP**, or **Any**.



Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications may have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-600L. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger" 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-600L provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

Enable: Check the box to enable the rule.

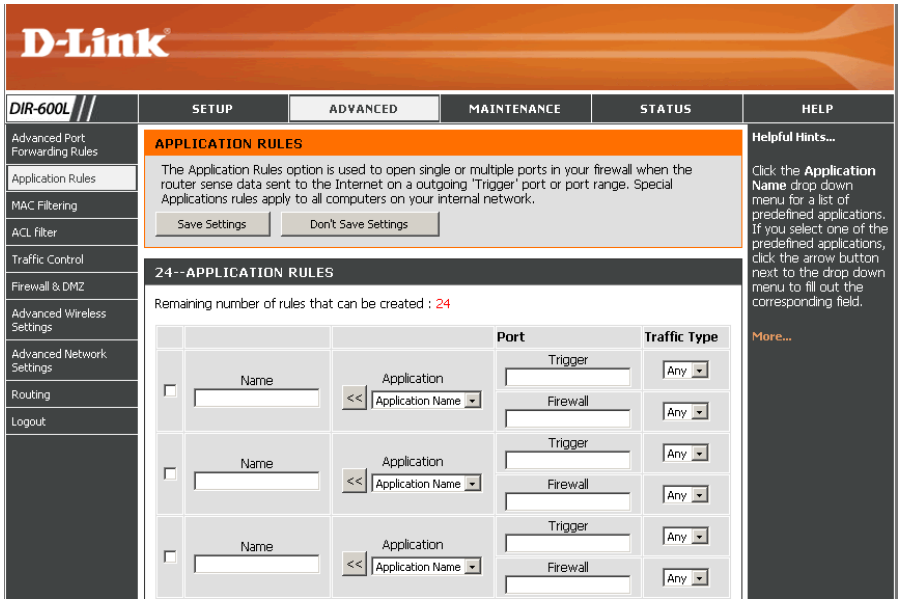
Name: Enter a name for the rule.

Application: You may select a pre-defined rule from the drop-down menu. Select and click << to populate the required fields.

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

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 **TCP**, **UDP**, or **Any**.



MAC Filtering

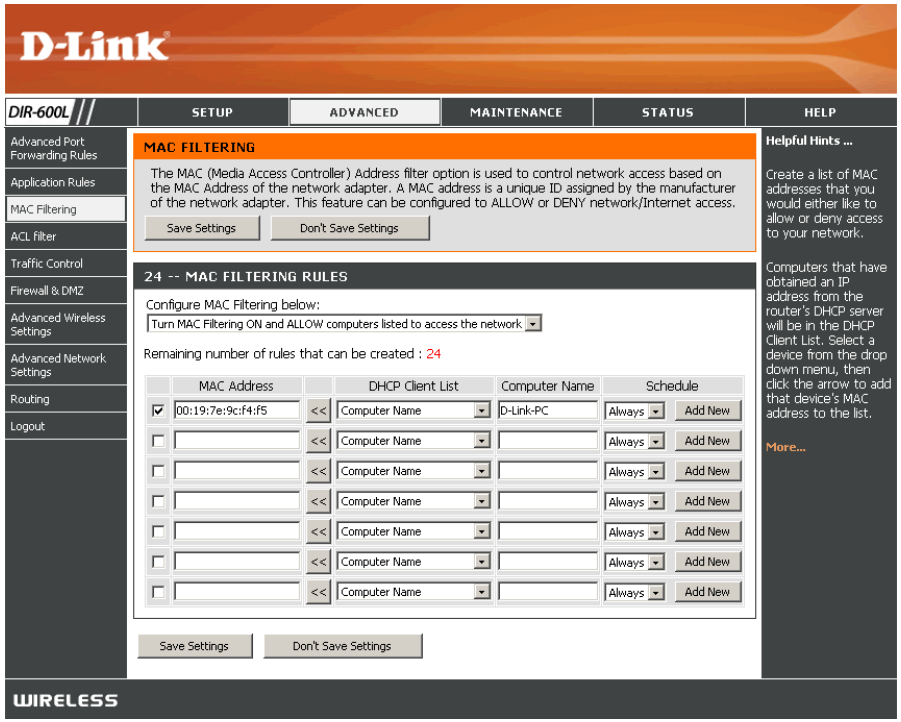
Use MAC Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Router.

Configure MAC Filter: Select **Turn MAC Filtering OFF**, **Turn MAC Filtering ON and ALLOW computers listed to access the network**, or **Turn MAC Filtering ON and DENY computers listed to access the network**.

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 the << button to populate the required fields.

Schedule: The schedule of time when the network filter 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 by clicking **Add New**.



Traffic Control

Traffic control can be used to distribute download bandwidth automatically according to the requirements of the users, and the users also can setup manually.

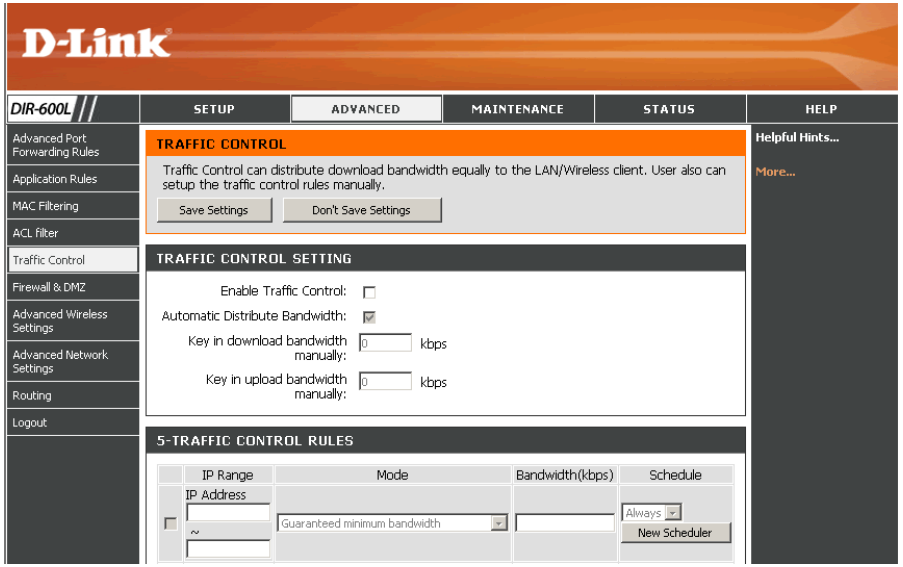
Enable Traffic Control: Select this function to control the access bandwidth of computer in LAN.

Automatic Distribute Bandwidth: All the computers in LAN will be distributed bandwidth equally.

Key in download bandwidth manually: Manually enter the download bandwidth.

Key in upload bandwidth manually: Manually enter the upload bandwidth.

Traffic Control Rules: When the option Automatic Distribute Bandwidth is unchecked, you can control the access bandwidth of the specific device on your network.



Firewall & DMZ

This section will allow you to set up a DMZ host and to set up firewall rules.

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

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

Enable DMZ Host: Check to enable DMZ.

DMZ IP Address: Enter the IP address of the computer you would like to open all ports to. You may enter the IP address of the computer/device you want to open all ports to or select it from the drop-down menu and click <<.

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.

Name: Enter a name for the firewall rule.

Action: Select to *Allow* or *Deny* transport of the data packets according to the criteria defined in the rule.

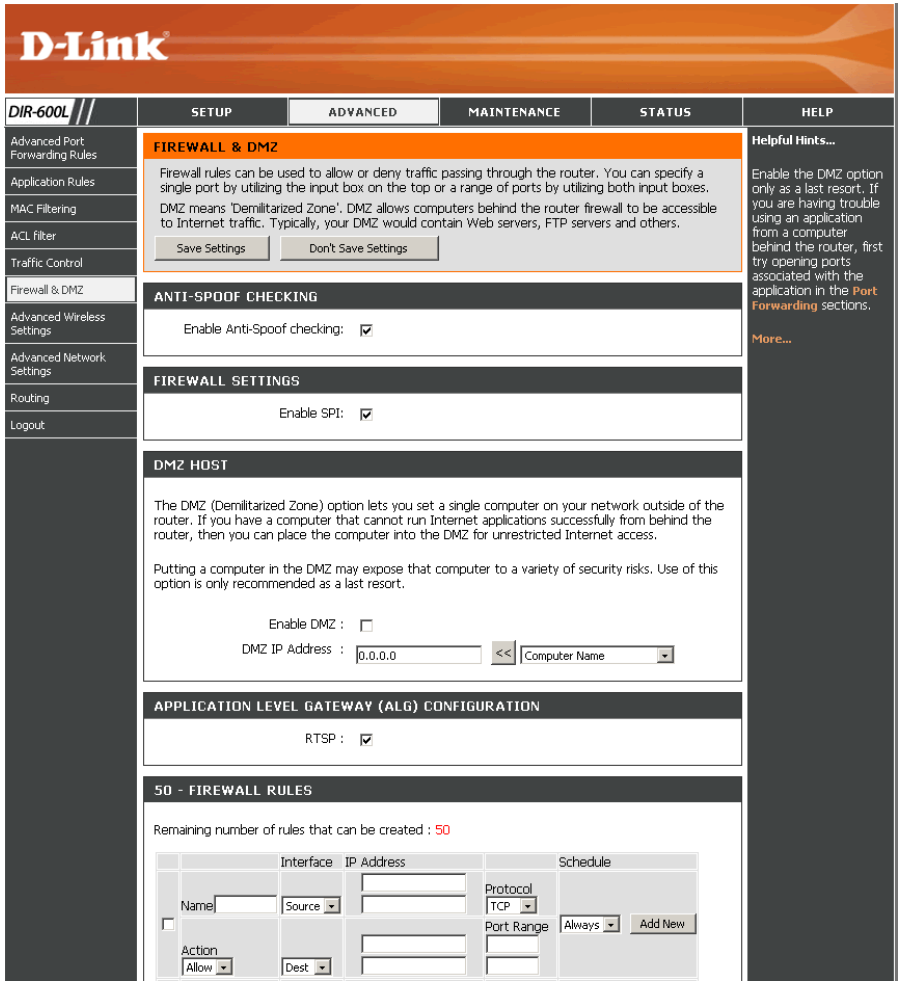
Source/Dest: The Source/Destination is the TCP/UDP port on either the LAN or WAN side.

Schedule: Click **Add New** to access the Schedules window. Refer to **Maintenance** > **Schedules** for more information.

IP Address: Enter a beginning and ending IP address.

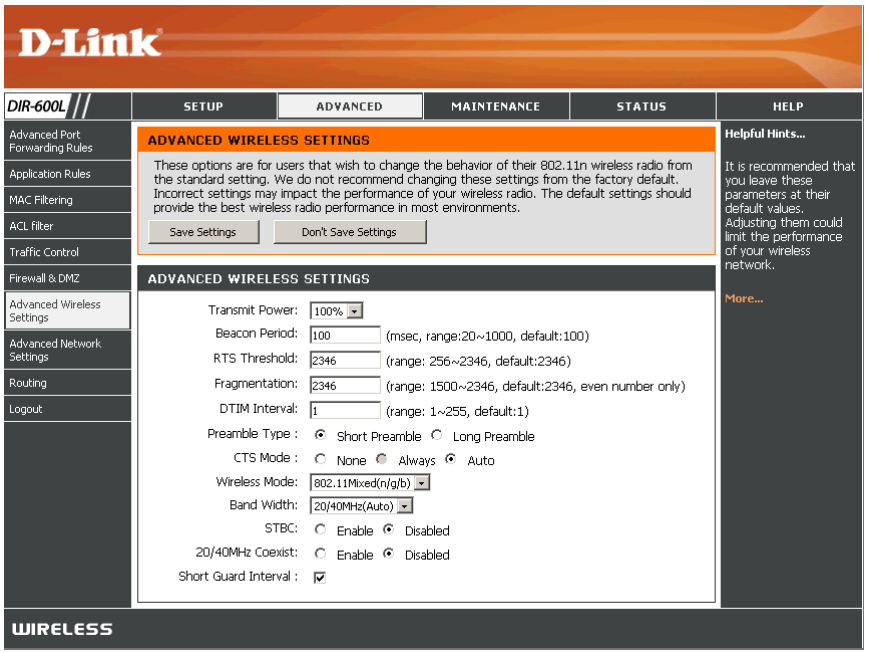
Protocol: Select the transport protocol that will be used for the filter rule.

Port Range: Enter the desired port range for the filter rule.



Advanced Wireless

This window allows you to change the behavior of the 802.11g wireless radio from the standard settings. Please be aware that any changes to the factory default settings may adversely affect the behavior of your network.



Transmit Power: Set the transmit power of the antennas.

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

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

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

DTIM Interval: (Delivery Traffic Indication Message) *1* is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

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

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

Wireless Mode: Select one of the following:
Mixed 802.11g and 802.11b - Select if you are using both 802.11b and 802.11g wireless clients.
802.11n Only - Select only if all of your wireless clients are 802.11n.
Mixed 802.11n, 802.11b, and 802.11g - Select if you are using a mix of 802.11n, 11g, and 11b wireless clients.

Band Width: Select the Band Width:
Auto 20/40 - 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. This is the default setting.

STBC: Check to enable Space Time Block Coding (STBC). This will increase your wireless coverage.

20/40MHz Coexist: Check to allow 20MHz and 40MHz to coexist.

Short Guard Interval: Check this box to reduce the guard interval time therefore increasing the data capacity. However, it's less reliable and may create higher data loss.

Advanced Network

This window allows you to change the LAN settings. Please be aware that any changes to the factory default settings may affect the behavior of your network.

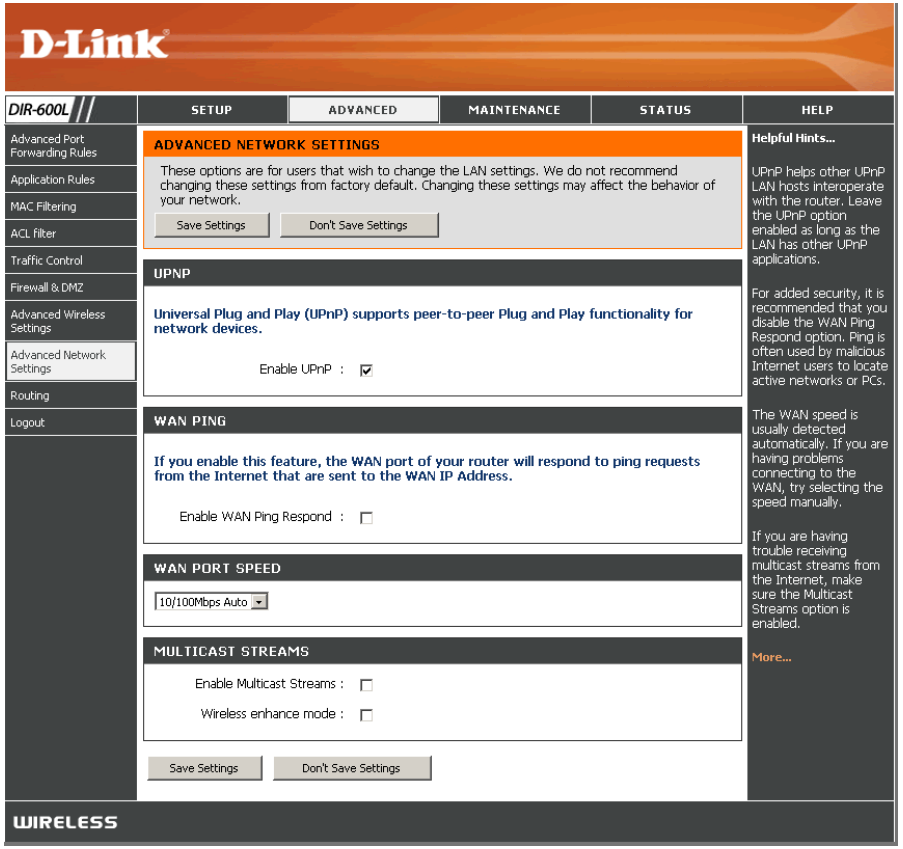
Enable UPnP: Check this box to enable Universal Plug and Play (UPnP™). UPnP provides compatibility with networking equipment, software and peripherals.

Enable WAN Ping Respond: Check this box to allow the WAN port to be "Pinged". Disabling ping responses may provide some extra security from hackers.

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

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

Wireless enhance mode: Check to enable wireless enhance mode to increase data throughput. Enabling this will cause the router to use more processing and may cause your LAN speeds to decrease.



Routing

This option allows you to define fixed routes to defined destinations.

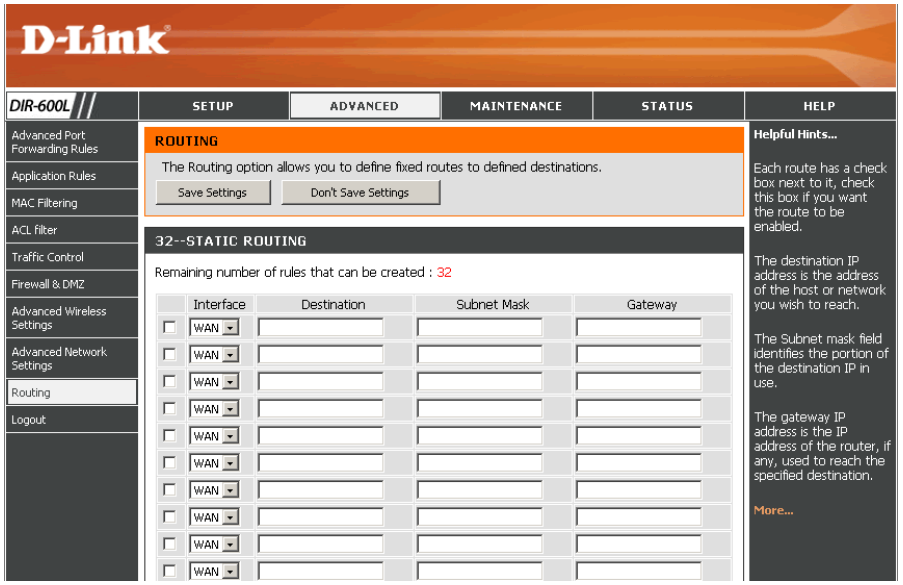
Enable: Check this box to enable fixed routes to defined destinations.

Interface: Use the drop-down menu to choose the *WAN or WAN (Physical Port)* Interface the IP packet must use to transit out of the Router.

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

Subnet Mask: The subnet of the IP address of the packets that will take this route.

Gateway: Specifies the next hop to be taken if this route is used.



Device Administration

This window will allow you to change the Administrator password. You can also enable Remote Management.

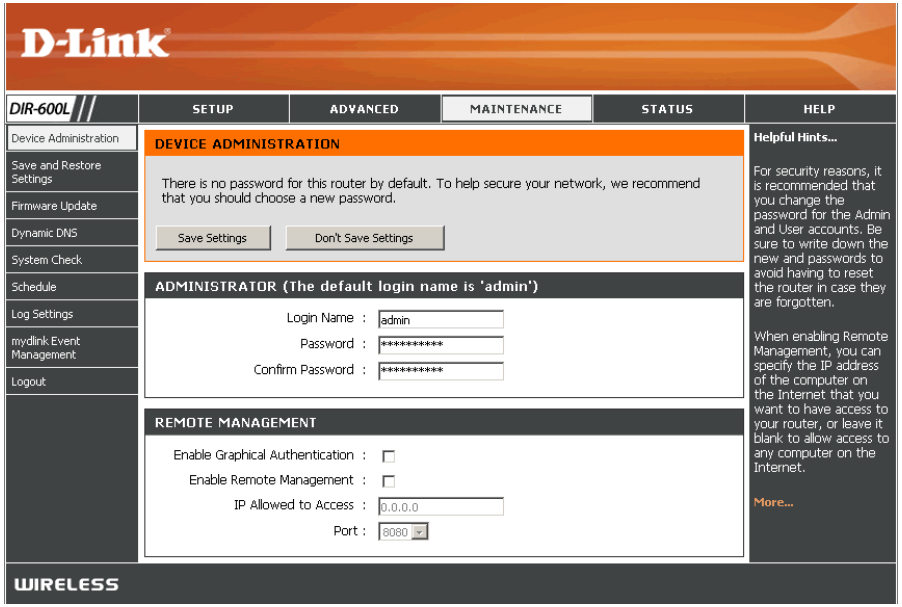
Administrator Login Name: Enter a new Login Name for the Administrator account.

Administrator Password: Enter a new password for the Administrator Login Name and then retype the new password in the Confirm Password textbox. The administrator can make changes to the settings.

Enable Remote Management: Remote management allows the DIR-600L to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

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

Port: The port number used to access the DIR-600L. For example: http://x.x.x.x:8080 whereas x.x.x.x is the WAN IP address of the DIR-600L and *8080* is the port used for the Web-Management interface.



Save and Restore

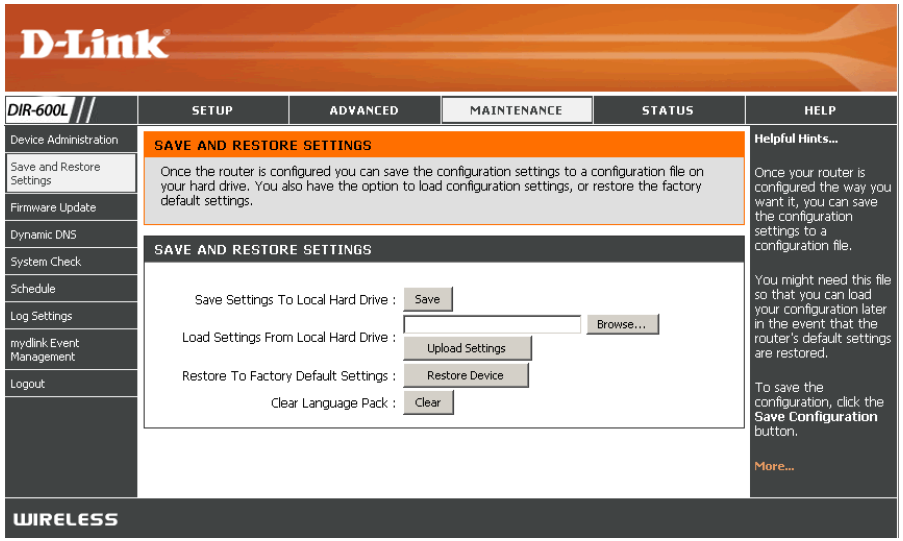
This window allows you to save your configuration file to a hard drive, load configuration settings from a hard drive, and restore the Router's factory default settings.

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

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

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

Clear Language Pack: Click to remove all non-default language packs from the router.



Firmware Update

You can upgrade the firmware of the Router here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support site for firmware updates at **http://support.dlink.com**. You can download firmware upgrades to your hard drive from the D-Link support site.

Firmware Upgrade: Click the **Check Now** button (or the link at the top of the window) to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

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

Language Pack

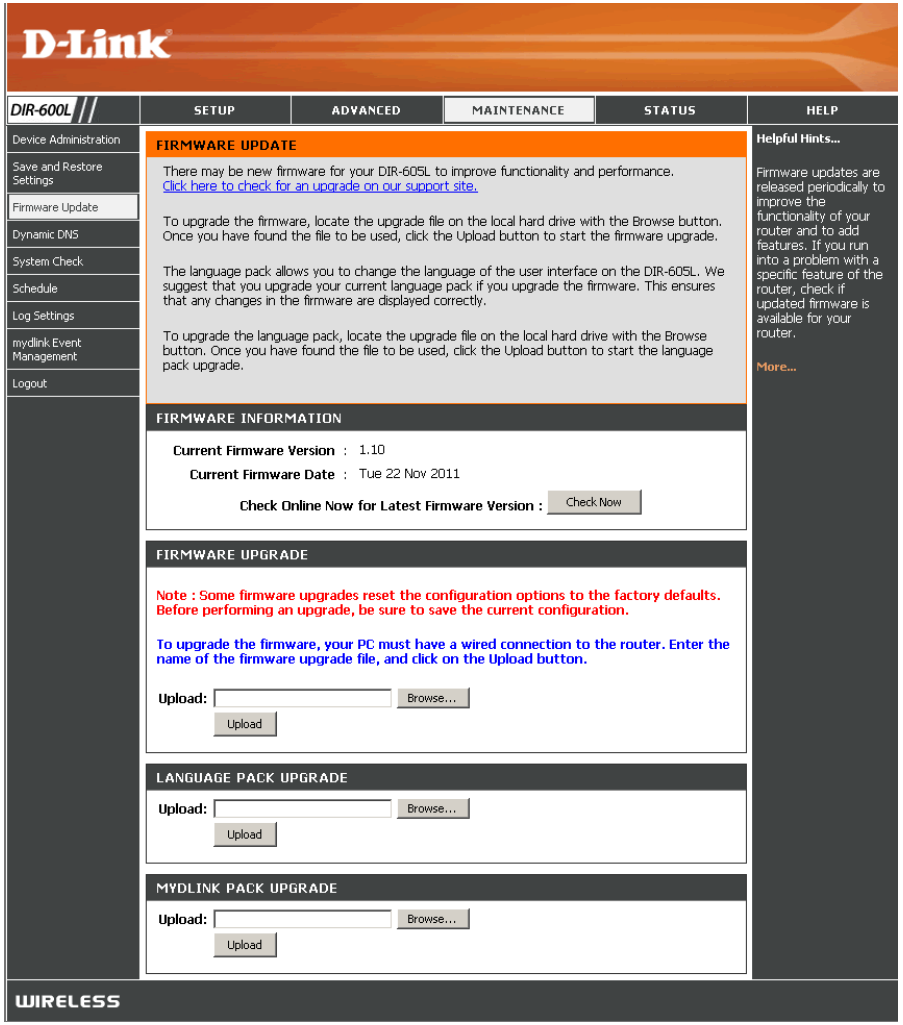
You can change the language of the web UI by uploading available language packs.

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

mydlink Pack

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

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



DDNS Setting

The router supports DDNS (Dynamic Domain Name Service). The Dynamic DNS service allows a dynamic public IP address to be associated with a static host name in any of the many domains, allowing access to a specified host from various locations on the Internet. This is enabled to allow remote access to a host by clicking a hyperlinked URL in the form "hostname.dyndns.org". Many ISPs assign public IP addresses using DHCP, this can make it difficult to locate a specific host on the LAN using standard DNS. If for example you are running a public web server or VPN server on your LAN, this ensures that the host can be located from the Internet if the public IP address changes. DDNS requires that an account be setup with one of the supported DDNS providers.

Enable DDNS: Check the **Enable DDNS** checkbox to enable support for DDNS.

Server Address: Select one of the DDNS registration organizations form those listed in the drop-down menu. Available servers include *dlinkddns.com (Free), DynDns.org (Custom), Dyn. Dns.org (free),* and *Dyn.Dns.org (Static)*.

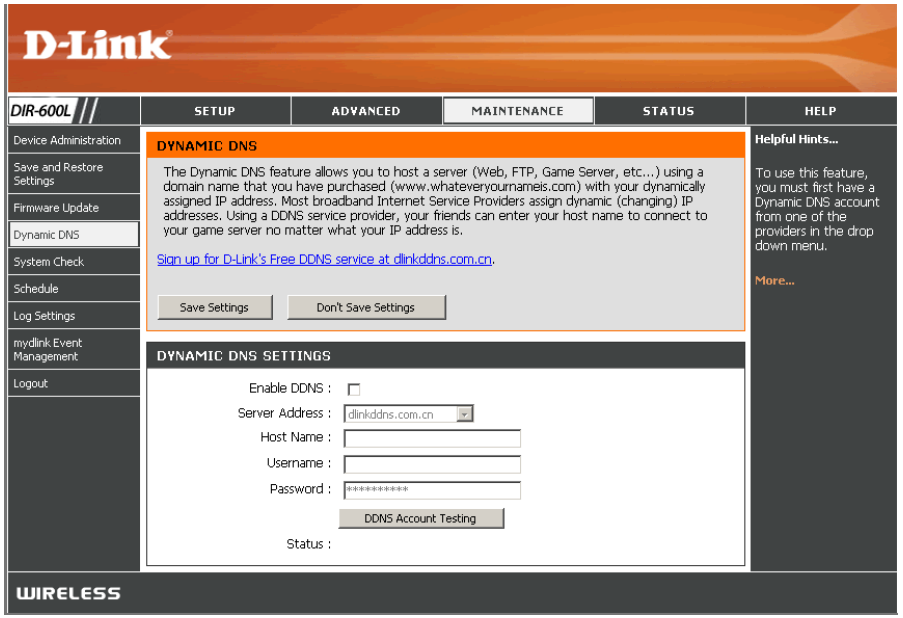
Host Name: Enter the host name of the DDNS server.

Username: Enter the username given to you by your DDNS server.

Password: Enter the password or key given to you by your DDNS server.

DDNS Account Testing: Click this button to test the connection of your DDNS account.

Status: Displays the connection status of your DDNS account.



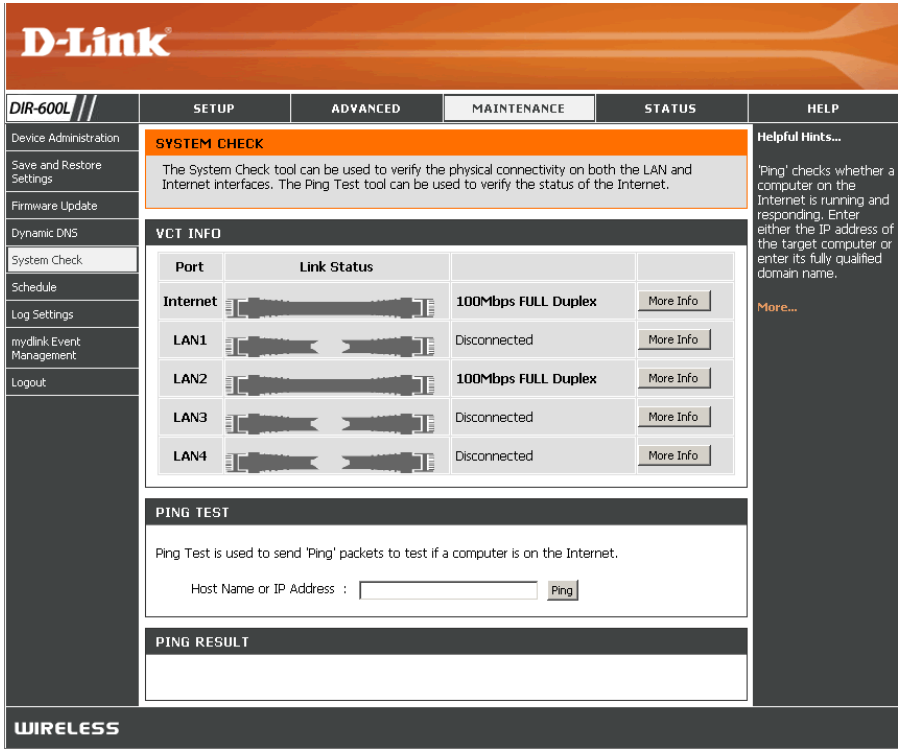
System Check

This tool is used to verify the physical connectivity on both the LAN and the WAN interfaces. The Ping Test can be used to test the status of the Internet.

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

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

Ping Result: Displays the ping results.



Schedules

The Router allows the user the ability to manage schedule rules for various firewall and parental control features on this window. Once you have finished configuring the new schedule rule, click the **Save Settings** button at the top.

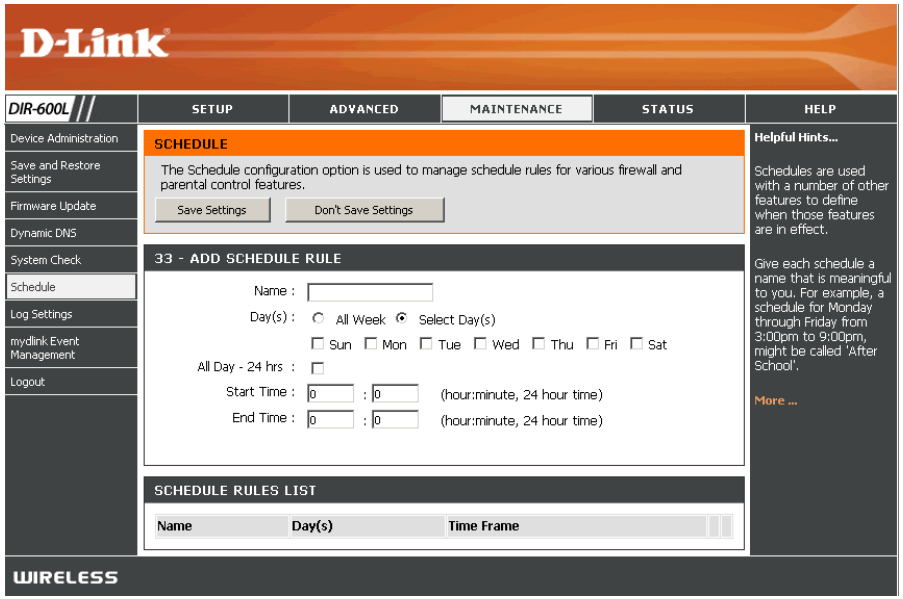
Name: Enter a name for the new schedule rule.

Day(s): Choose the desired day(s), either **All Week** or **Select Days**. If the latter is selected, please use the check boxes directly below to specify the individual days.

All Day - 24 hrs: Click this check box if the new schedule rule applies to the full 24-hour period.

Start Time/ End Time: If the new schedule rule does not apply to the full 24-hour period, uncheck the previous checkbox and then enter a specific beginning and ending time.

Schedule Rules List: Displays user-created rules.



Log Settings

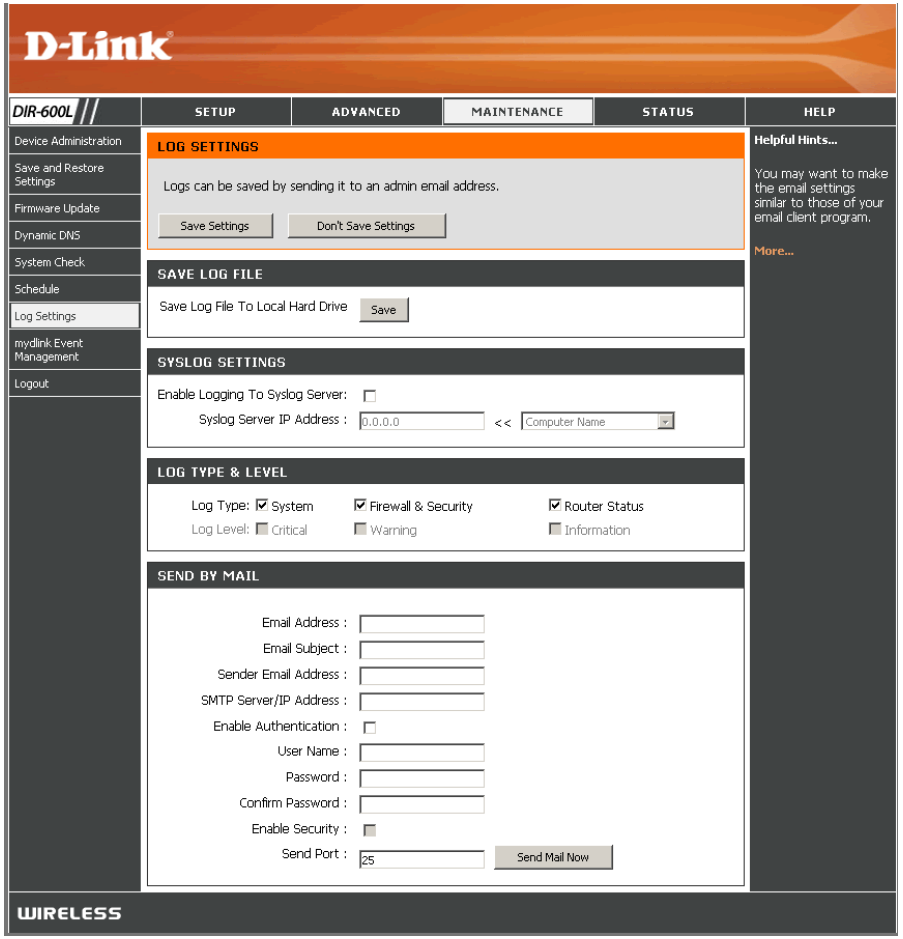
The system log displays chronological event log data specified by the router user. You may also save a simple text file containing the log to your computer. Click the **Save** button and follow the prompts to save the file.

Save Log File: Click on the **Save** button link on this window to save the log file to your local hard drive.

Syslog Server: Check the **Enable Logging to Syslog Server** box to save the log to a syslog server on your network. Then enter the IP address of the server or select it from the drop-down menu.

Log Type & Level: Check the box(es) of the type of log information you want the router to log.

Send by Mail: Enter the your SNTP server name (or IP address) and enter your mail address before sending your system log by mail.



Device Info

This window displays the current information for the DIR-600L. It will display the LAN, WAN, and Wireless information.

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

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

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

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

Wireless 802.11N: Displays your wireless settings such as SSID, Channel, and Encryption status.

Log

This window allows you to view a log of activities on the Router. This is especially helpful detecting unauthorized network usage.

First Page: View the first page of the log.

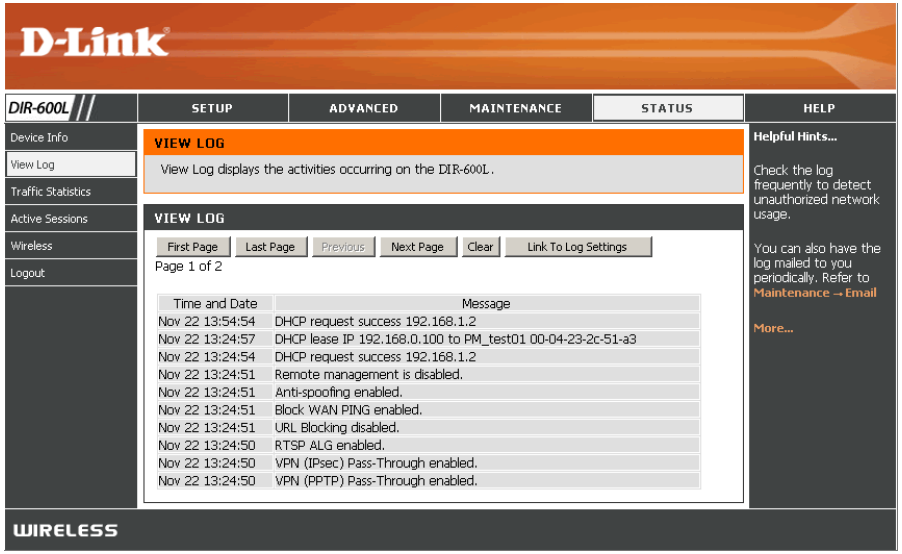
Last Page: View the last page of the log.

Previous: View the previous page.

Next Page: View the next page.

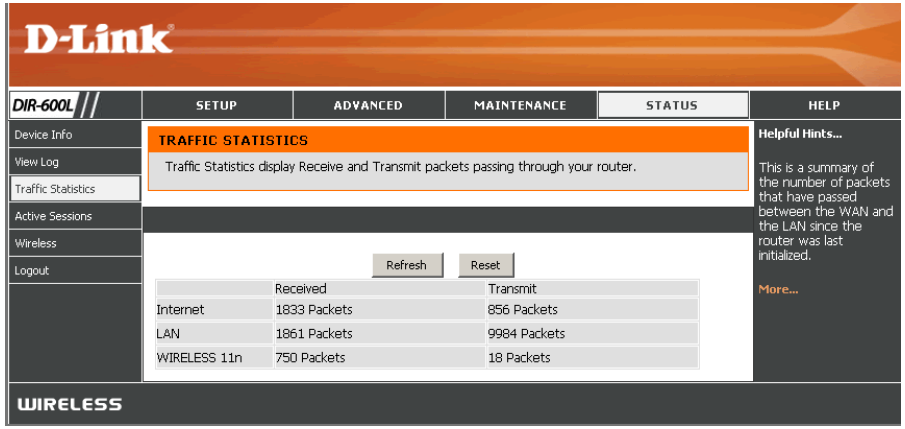
Clear: Clear the log.

Link to Log Settings: Click this button to go directly to the Log Settings window (**Maintenance** > **Log Settings**).



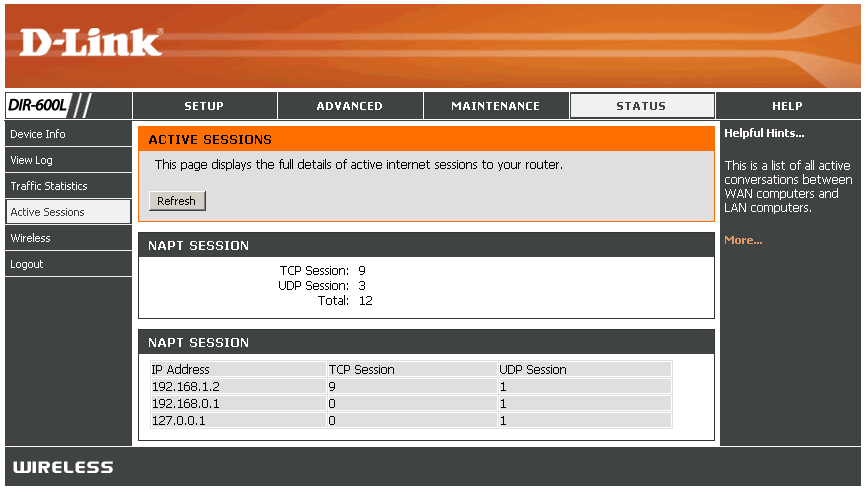
Traffic Statistics

The window below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DIR-600L on the Internet, LAN, and Wireless segments. The traffic counter will reset if the device is rebooted.



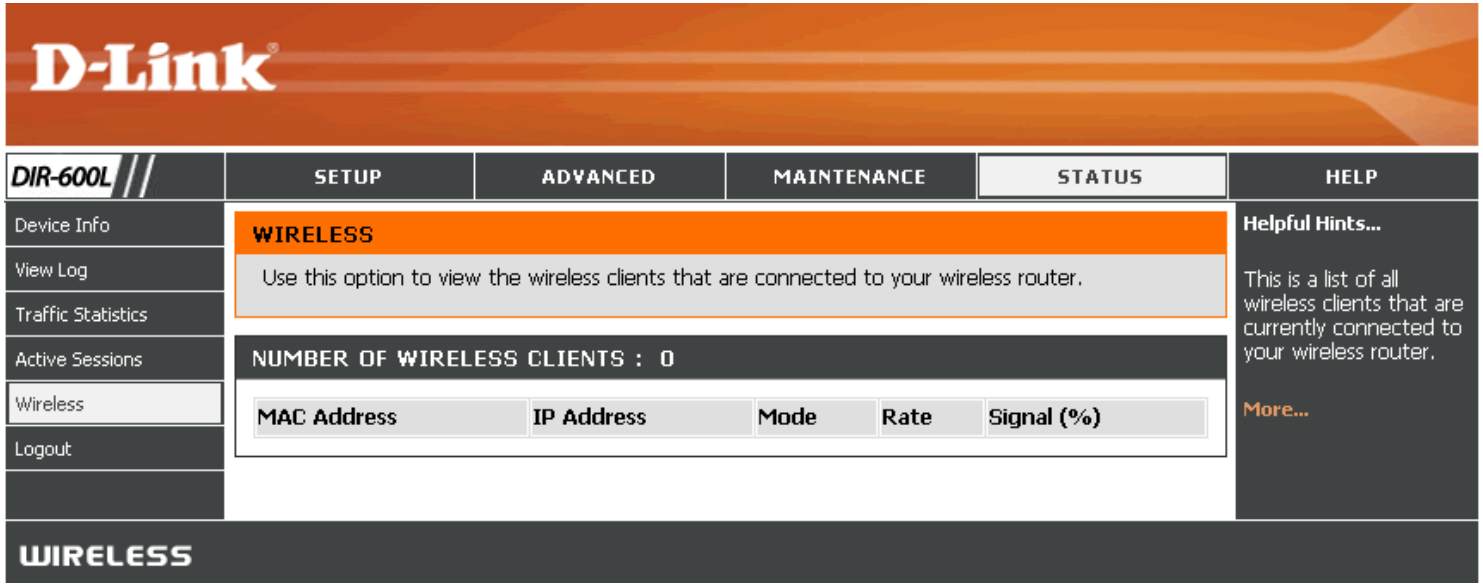
Active Session

The NAPT Active Session table displays a list of all active conversations between WAN computers and LAN computers.



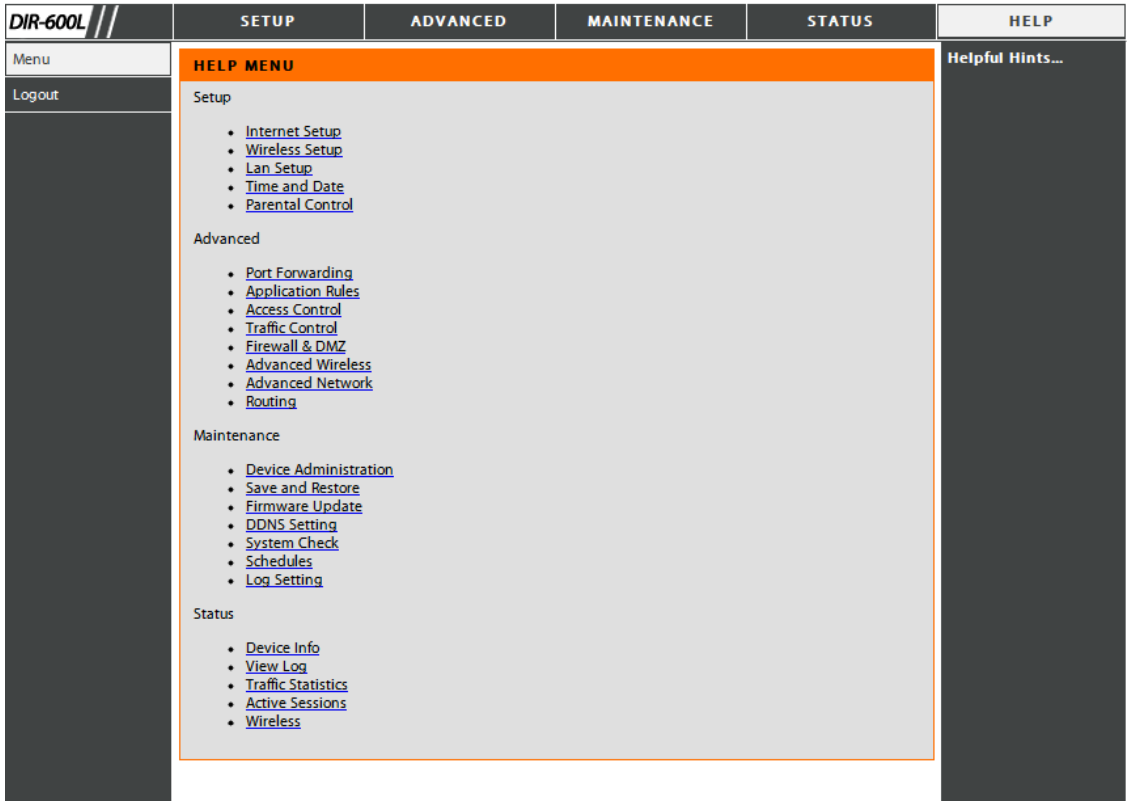
Wireless

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



Help

Click the desired hyperlink to get more information about how to use the Router.

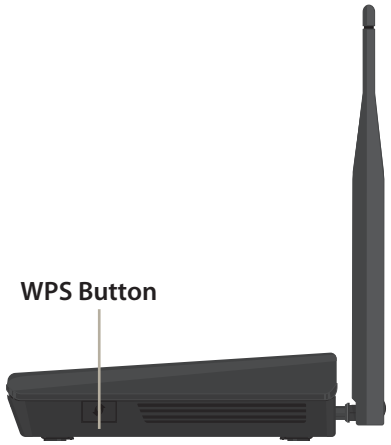


Connect a Wireless Client to your Router

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-600L 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-600L for a few seconds until the WPS button starts blinking.



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

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

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.

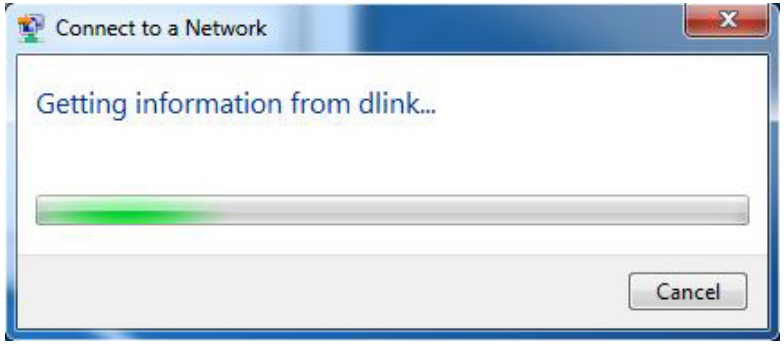
1. Click on the wireless icon in your system tray (lower-right corner).

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

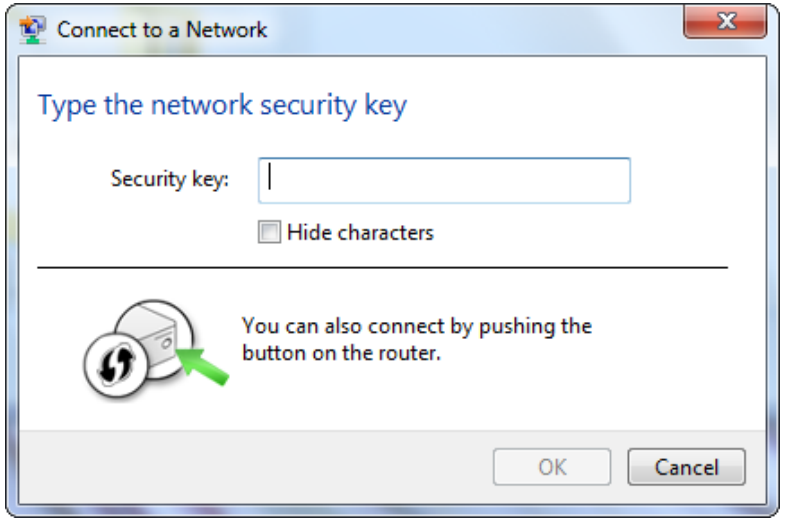
3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

   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.

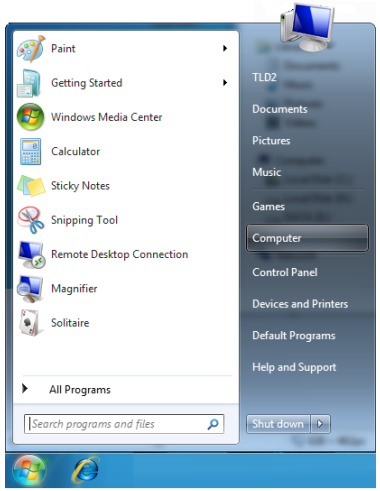


It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

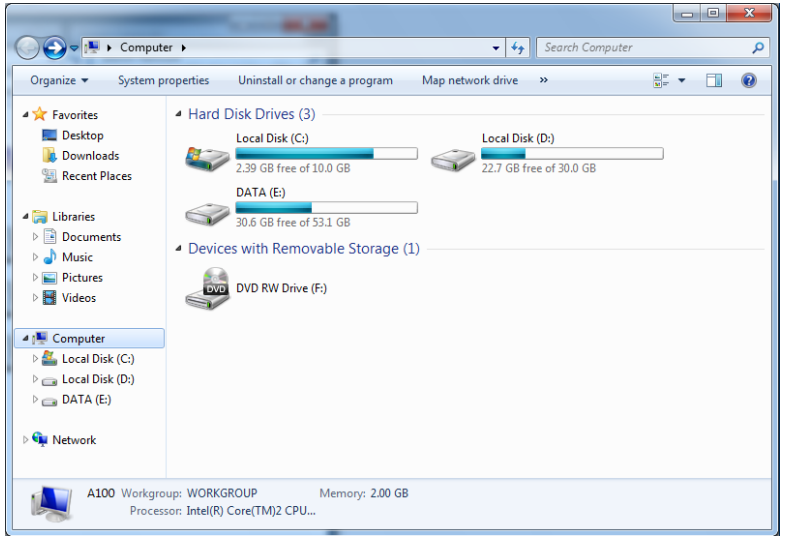
WPS

The WPS feature of the DIR-600L can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature:

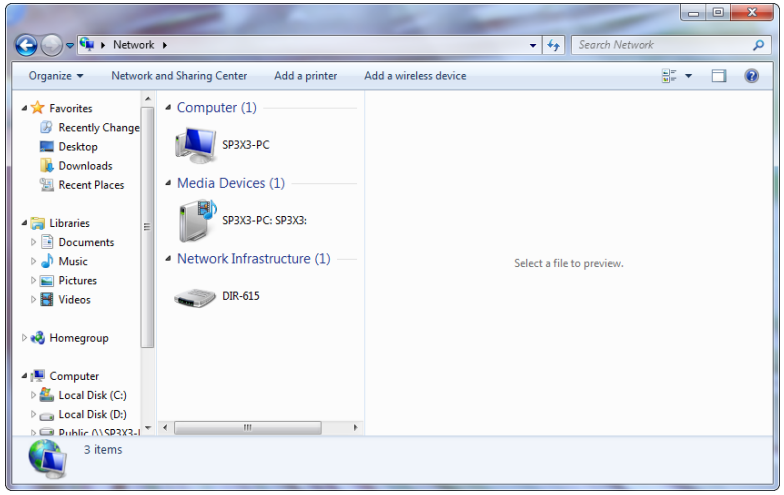
1. Click the **Start** button and select **Computer** from the Start menu.



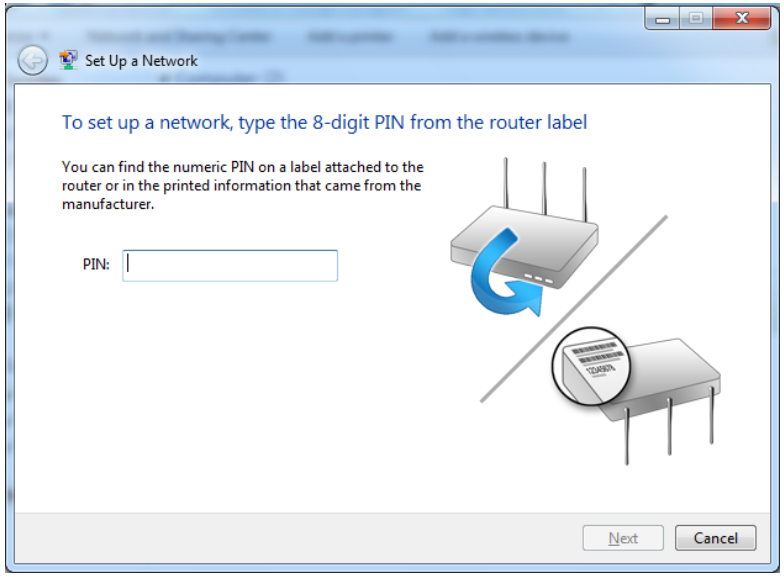
2. Click **Network** on the left side.



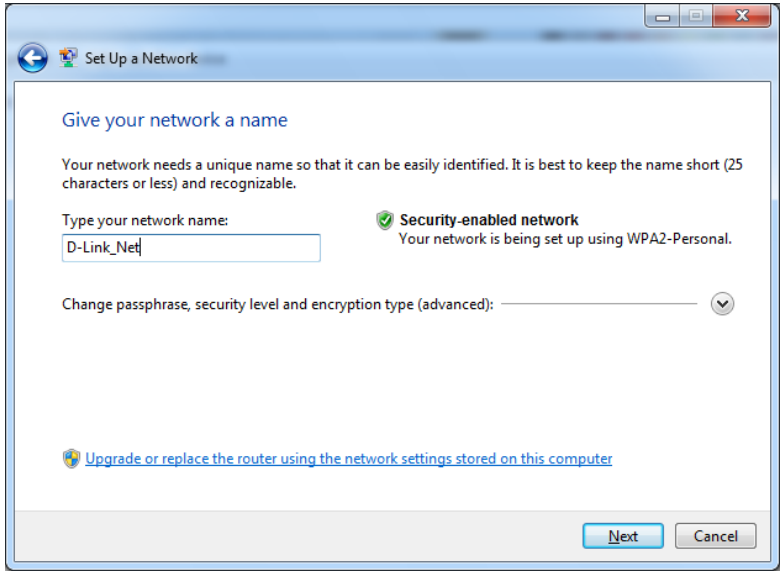
3. Double-click the DIR-600L.



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**.

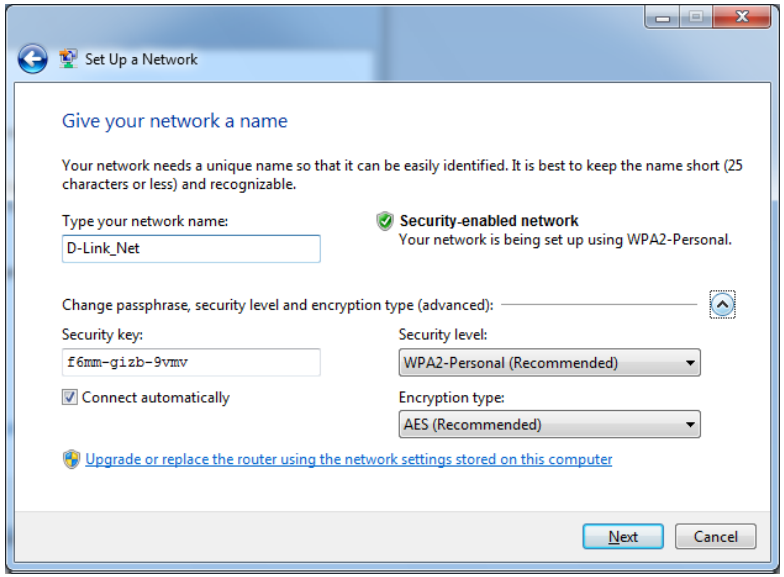


5. Type a name to identify the network.



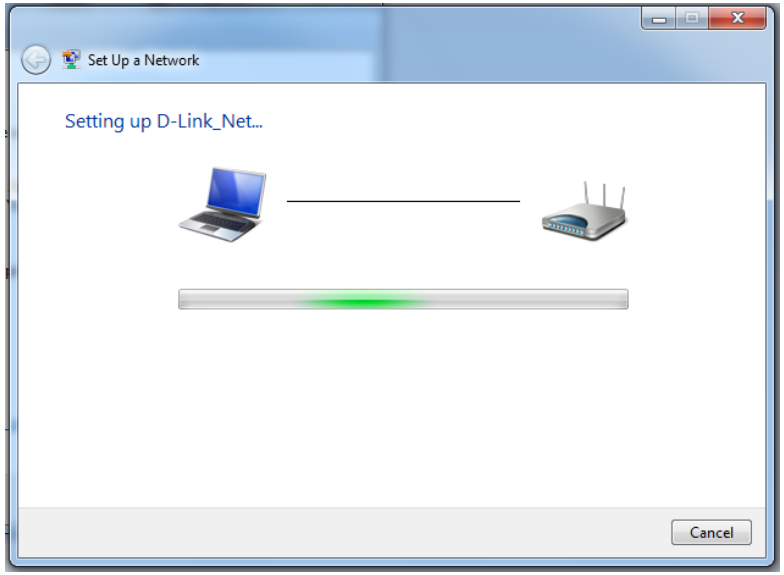
6. To configure advanced settings, click the icon.

Click **Next** to continue.



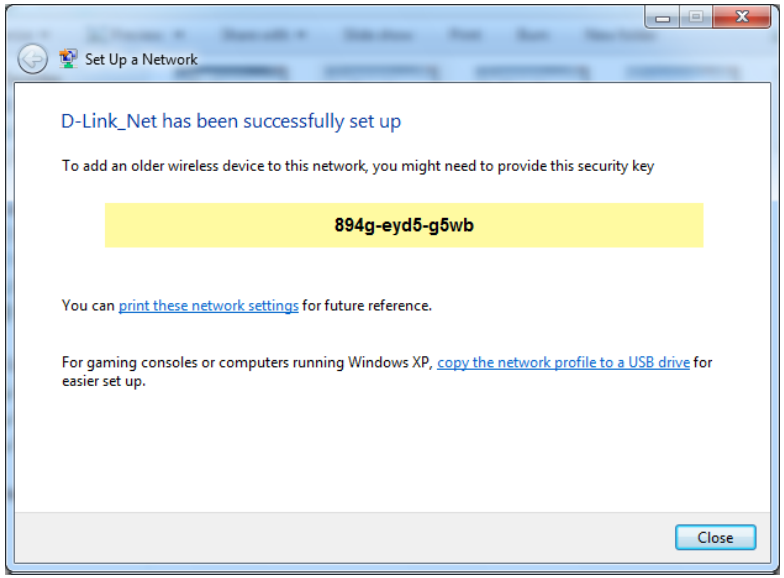
7. The following window appears while the Router is being configured.

   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.

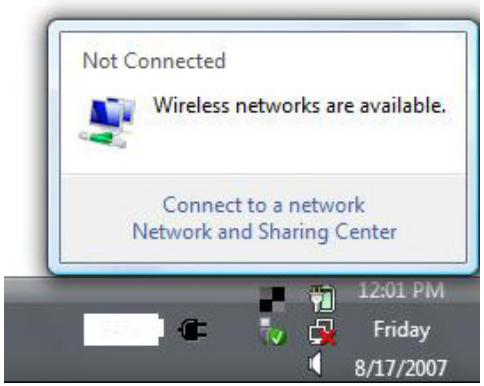
Windows Vista®

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.

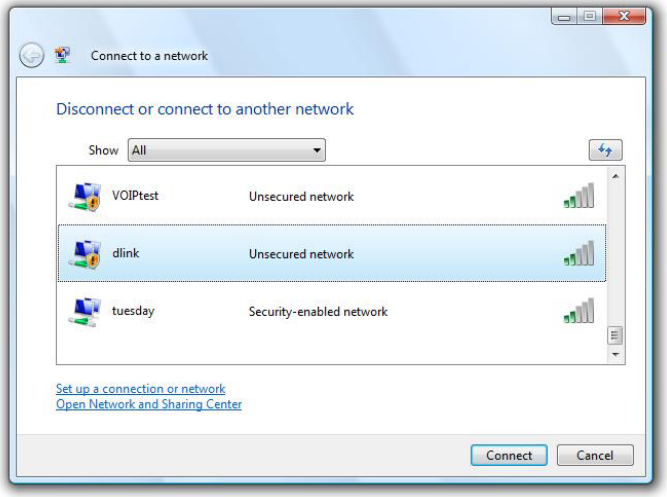
or

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.

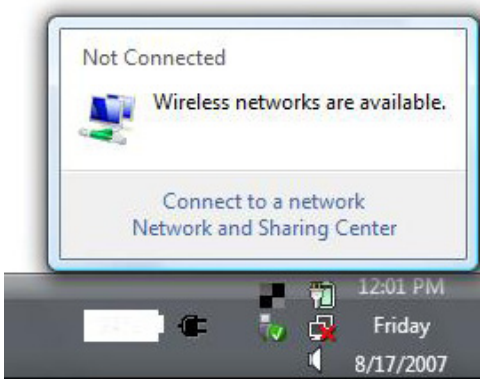
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



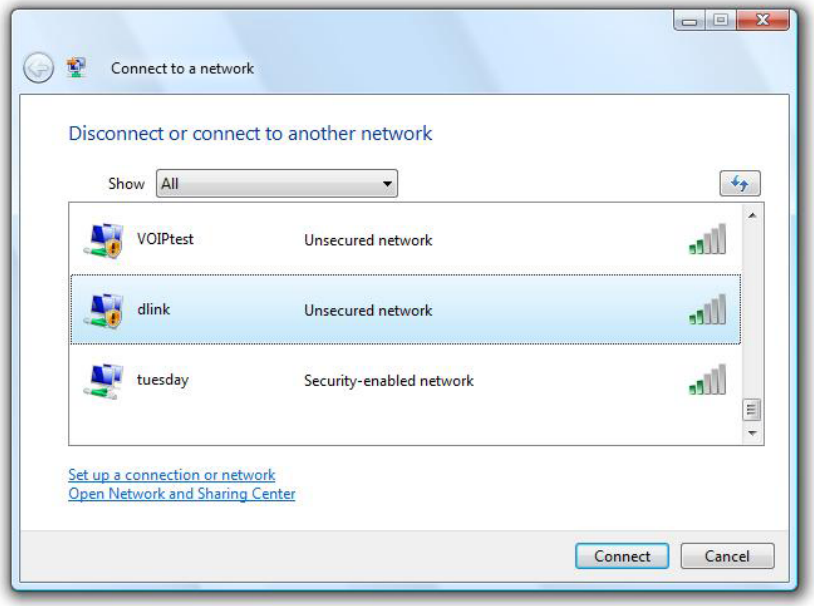
WPA/WPA2

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**.

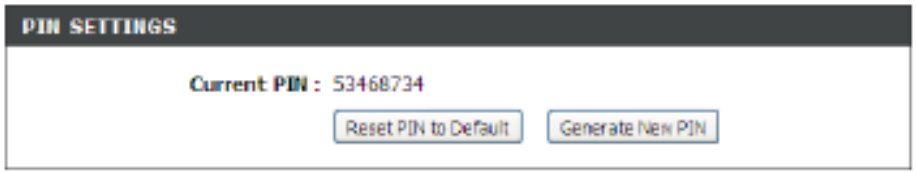
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

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.

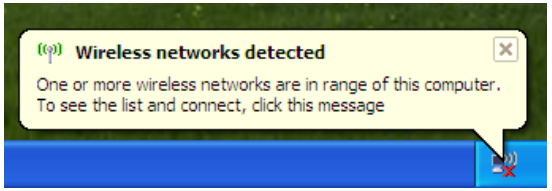


If you are using third party software to set up Wi-Fi Protection, carefully follow the directions. When you are finished, proceed to the next section to set up the newly-configured router.

Windows® XP

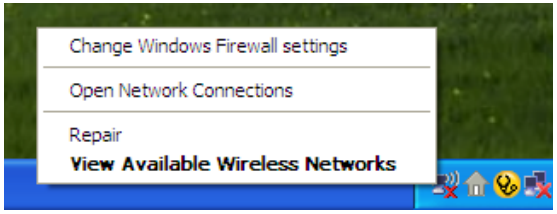
Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities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

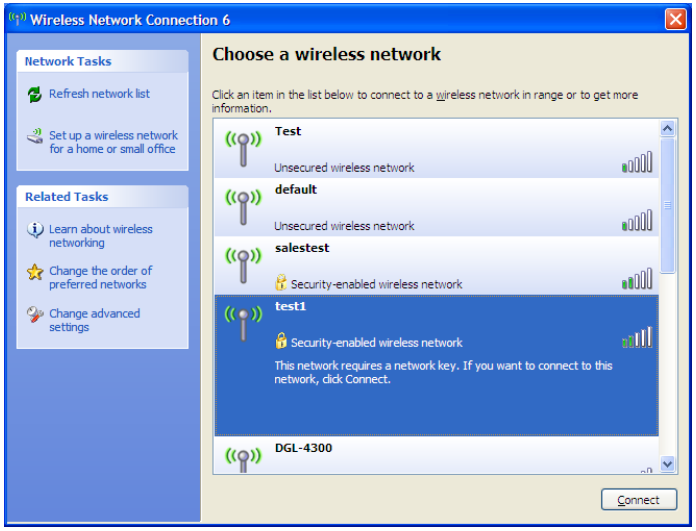


or

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.

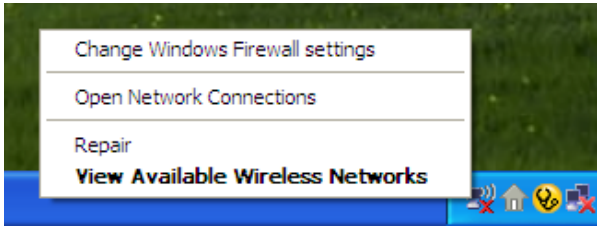


If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.

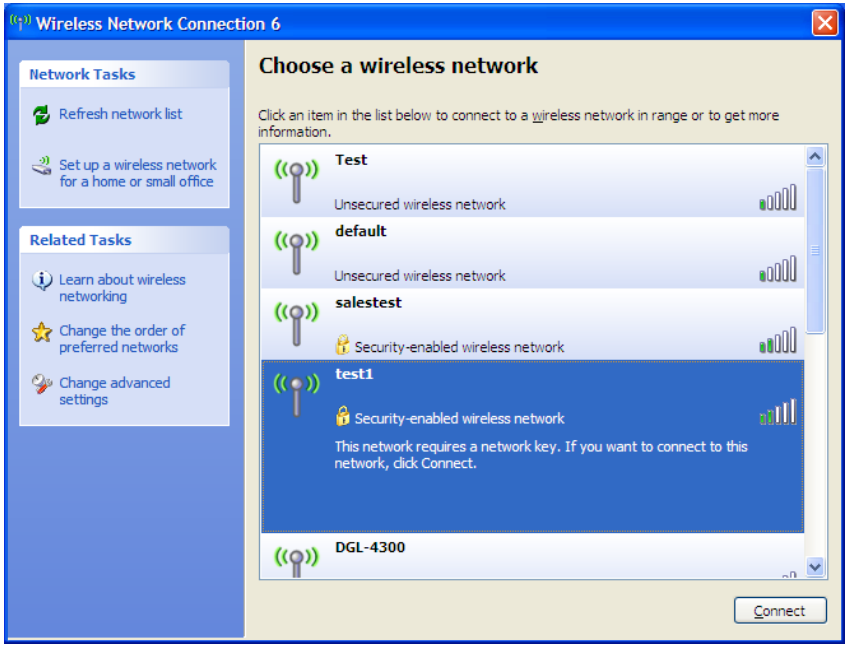
WPA/WPA2

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.

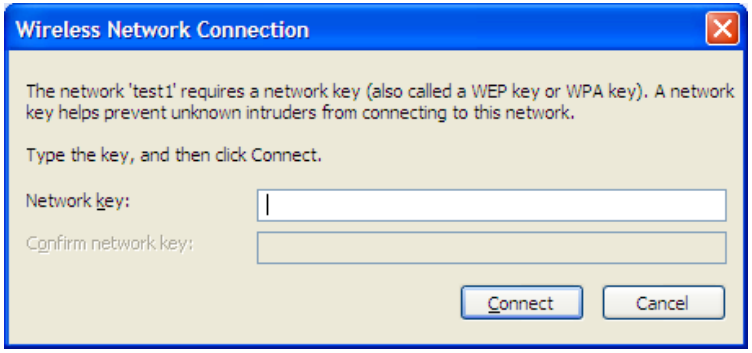
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.



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-600L. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

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

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

- Make sure you have an updated Java-enabled web browser. We recommend the following:

    - Internet Explorer 7 or higher
    - Firefox 3.5 or higher
    - Safari 4 or higher
    - Chrome 8 or higher

- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

• Configure your Internet settings:

  • Go to **Start** > **Settings** > **Control Panel**. Double-click the **Internet Options** Icon. From the **Security** tab, click the button to restore the settings to their defaults.

  • Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the **LAN Settings** button. Make sure nothing is checked. Click **OK**.

  • Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.

  • Close your web browser (if open) and open it.

• Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your the web management.

• If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

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

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

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

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

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

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

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

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

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

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

```
C:\>ping yahoo.com -f -l 1482

Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

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

C:\>ping yahoo.com -f -l 1472

Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:

Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

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

C:\>
```

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

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

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

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure**.
- To change the MTU enter the number in the MTU field and click the **Save Settings** button to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

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

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

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

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

What is Wireless?

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

Why D-Link Wireless?

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

How does wireless work?

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

Wireless Local Area Network (WLAN)

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

Wireless Personal Area Network (WPAN)

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

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

Who uses wireless?

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

Home

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

Small Office and Home Office

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

Where is wireless used?

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

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like airports, hotels, coffee shops, libraries, restaurants, and convention centers.

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

Tips

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

Centralize your router or Access Point

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

- Universal repeater: It acts as an AP and a wireless STA at the same time. It can support all AP and wireless STA if they work in the same wireless channel.
- AP-repeater (AP with WDS): only repeat same model or limited models which base on the same proprietary protocol.

Please choose a universal 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.

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

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

Networking Basics

Check your IP address

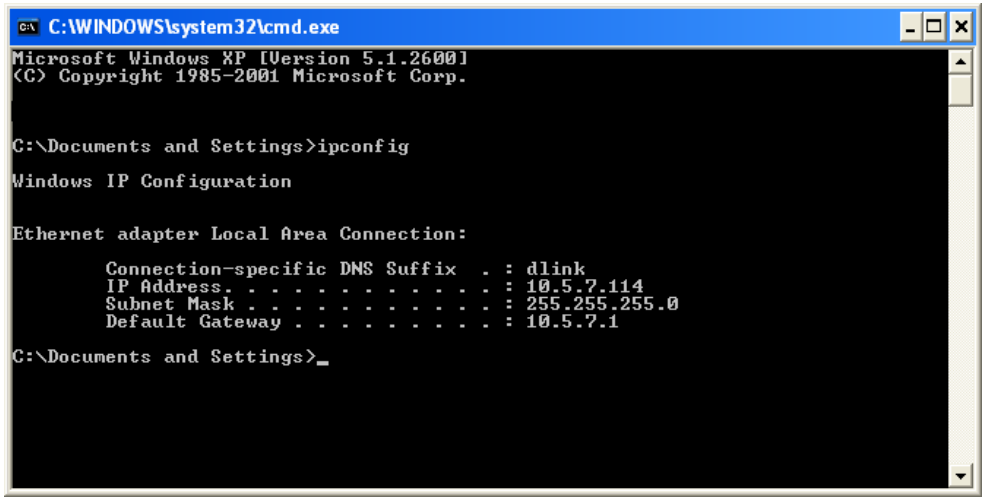
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

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

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

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

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



Statically Assign an IP address

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

Step 1

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

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

Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.

Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

Step 2

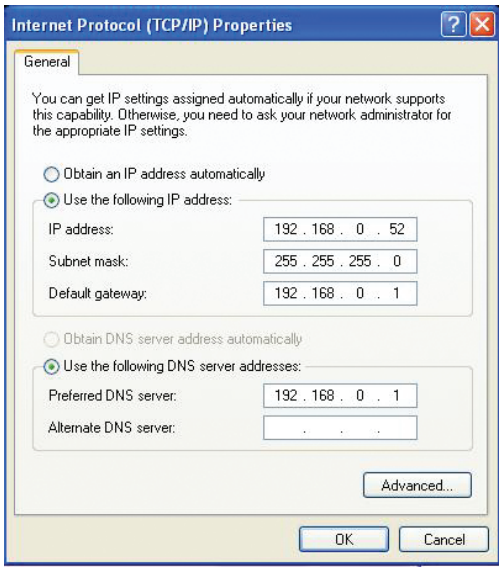
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties**.

Step 3

Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

Step 4

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



Example: If the router´s LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set the Default Gateway the same as the LAN IP address of your router (I.E. 192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5

Click **OK** twice to save your settings.

Technical Specifications

Standards
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.11n
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x

Wireless Signal Rates*
- 150Mbps
- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 1Mbps

Security
- WPA - Wi-Fi Protected Access (TKIP, MIC, IV Expansion, Shared Key Authentication)
- WPA/WPA2

Modulation Technology
- 802.11 b : DSSS / DBPSK / DQPSK / CCK
- 802.11 g : 16QAM / 64QAM / BPSK / QPSK with OFDM
- 802.11 n : 16QAM / 64QAM / BPSK / QPSK with OFDM

VPN Pass Through/ Multi-Sessions
- PPTP
- IPSec

Device Management
- Web-based Internet Explorer 8 or later, or other Java-enabled browsers
- DHCP Server and Client

Wireless Frequency Range*
- 2.4GHz to 2.497GHz (802.11b)
- 2.4GHz to 2.4835GHZ (802.11g and 802.11n)

Wireless Operating Range
- Indoors - up to 328 ft. (100 meters)
- Outdoors- up to 1312 ft. (400 meters)

Wireless Transmit Power (AVG Power)
- 11b:17dBm(Max)
- 11g:16dBm(Max)
- 11n:13dBm(Max)

External Antenna Type
- One fixed external antenna

Advanced Firewall Features
- NAT with VPN Pass-through (Network Address Translation)
- MAC Filtering
- IP Filtering
- URL Filtering
- Scheduling

Operating Temperature
- 32°F to 129 °F (0°C to 40°C)

Humidity
- 95% maximum (non-condensing)

Safety and Emissions
- FCC
- CE
- C-tick
- NCC
- CCC

LEDs
- Power
- Status
- Internet
- WLAN (Wireless Connection)
- LAN (10/100)

Dimensions
- L = 135mm
- W = 99.8mm
- H = 31.5mm

Weight
- 0.200kg

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

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-600L)
- 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

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:

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

- One (1) Year Limited Warranty

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

Limited Software Warranty:

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

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

Submitting A Claim (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 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 1-877-453-5465, 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:

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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.

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.

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