



# **DIR-815**

## **User Manual**

**Wireless N Dual Band Router**

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# 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	May 25, 2010	DIR-815 Revision A1

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# Table of Contents

<b>Preface</b> .....	<b>i</b>	Manual Internet Connection Setup .....	28
Manual Revisions .....	i	Static IP .....	29
Trademarks .....	i	Dynamic IP (DHCP) .....	30
<b>Product Overview</b> .....	<b>1</b>	PPPoE (Username/Password) .....	31
Package Contents .....	1	PPTP .....	33
System Requirements .....	2	L2TP .....	35
Introduction .....	3	Russia PPTP (Dual Access) .....	37
Features .....	4	Russia PPPoE (Dual Access) .....	39
Hardware Overview .....	5	Wireless Settings .....	41
Connections .....	5	Manual Wireless Settings .....	42
WPS Button .....	6	802.11n/b/g (2.4GHz) .....	42
LEDs .....	7	802.11n/a (5GHz) .....	43
<b>Installation</b> .....	<b>8</b>	Network Settings .....	44
Before you Begin .....	8	Router Settings .....	45
Wireless Installation Considerations .....	9	DHCP Server Settings .....	46
Connect to Cable/DSL/Satellite Modem .....	10	DHCP Reservation .....	47
Connect to Another Router .....	11	Advanced .....	48
Getting Started .....	13	Virtual Server .....	48
<b>Configuration</b> .....	<b>14</b>	Port Forwarding .....	50
Web-based Configuration Utility .....	14	Application Rules .....	51
Easy Setup .....	16	QoS Engine .....	52
Setup .....	20	Network Filter .....	53
Internet .....	20	Website Filter .....	54
Internet Connection Setup Wizard .....	21	Firewall Settings .....	55
		Firewall Rules .....	56
		Routing .....	58

Advanced Wireless Settings.....	59	System Check.....	82
802.11n/b/g (2.4GHz) .....	59	Schedules .....	83
802.11n/a (5GHz) .....	60	Status .....	84
Wi-Fi Protected Setup (WPS) .....	61	Device Info .....	84
Advanced Network .....	63	Logs .....	85
UPnP .....	63	Statistics .....	86
Internet Ping Block.....	63	Internet Sessions.....	87
Internet Port Speed.....	63	Wireless .....	88
Multicast Streams .....	63	IPv6 .....	89
IPv6 .....	64	Support .....	90
Static IPv6 .....	65	<b>Wireless Security .....</b>	<b>91</b>
Static IPv6 (Stateless).....	66	What is WPA? .....	91
Static IPv6 (Stateful) .....	67	Wireless Connection Setup Wizard .....	92
DHCPv6 (Stateful) .....	68	Wireless Security Setup Wizard .....	93
DHCPv6 (Stateful)- Stateless Autoconfig.....	69	Add Wireless Device with WPS Wizard.....	95
DHCPv6 (Stateful)- Stateful Autoconfig.....	70	Configure WEP .....	96
6to4.....	71	Configure WPA/WPA2-Personal (PSK) .....	97
6to4- Stateless Autoconfiguration.....	72	Configure WPA/WPA2-Enterprise (RADIUS) .....	98
6to4- Stateful (DHCPv6) Autoconfiguration .....	73	<b>Connect to a Wireless Network.....</b>	<b>99</b>
Link-local Only .....	74	Using Windows® 7 .....	99
IPv6 Firewall.....	75	Configure WPS .....	102
Tools .....	76	Using Windows Vista® .....	106
Admin .....	76	Configure Wireless Security .....	107
Time.....	77	Connect Using WCN 2.0 in Windows Vista® .....	109
Email Settings .....	78	Using Windows® XP .....	110
System .....	79	Configure WPA-PSK.....	111
Firmware .....	80		
Dynamic DNS .....	81		

**Troubleshooting ..... 113**

**Wireless Basics ..... 117**

    What is Wireless? ..... 118

    Tips..... 120

    Wireless Modes..... 121

**Networking Basics ..... 122**

    Check your IP address ..... 122

    Statically Assign an IP address ..... 123

**Technical Specifications ..... 124**

**Contacting Technical Support ..... 125**

**Warranty ..... 126**

**Registration ..... 132**

# Package Contents

D-Link DIR-815 Wireless N Dual Band Router	
Power Adapter	
Ethernet Cable	
CD-ROM	

**Note:** Using a power supply with a different voltage rating than the one included with the DIR-815 will cause damage and void the warranty for this product.

# System Requirements

<b>Network Requirements</b>	<ul style="list-style-type: none"><li>• An Ethernet-based Cable or DSL modem</li><li>• IEEE 802.11n or 802.11g wireless clients</li><li>• IEEE 802.11a wireless clients</li><li>• 10/100 Ethernet</li></ul>
<b>Web-based Configuration Utility Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows®, Macintosh, or Linux-based operating system</li><li>• An installed Ethernet adapter</li></ul> <p><b>Browser Requirements:</b></p> <ul style="list-style-type: none"><li>• Internet Explorer 6 or higher</li><li>• Firefox 3.0 or higher</li><li>• Safari 3.0 or higher</li><li>• Chrome 2.0 or higher</li></ul> <p><b>Windows® Users:</b> Make sure you have the latest version of Java installed. Visit <a href="http://www.java.com">www.java.com</a> to download the latest version.</p>
<b>CD Installation Wizard Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows® 7/ Vista® / XP with Service Pack 3</li><li>• An installed Ethernet adapter</li><li>• CD-ROM drive</li></ul>

# Introduction

## **TOTAL PERFORMANCE**

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

## **TOTAL SECURITY**

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

## **TOTAL COVERAGE**

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

## **ULTIMATE PERFORMANCE**

The D-Link Wireless N Dual Band router (DIR-815) is a 802.11n/802.11a compliant device that delivers real world performance of up to 14x faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the DIR-815 router to a cable or DSL modem and share your high-speed Internet access with everyone on the network. In addition, this Router includes a Quality of Service (QoS) engine that keeps digital phone calls (VoIP) and online gaming smooth and responsive, providing a better Internet experience.

## **TOTAL NETWORK SECURITY**

The Wireless N Dual Band router supports all of the latest wireless security features to prevent unauthorized access, be it from over the wireless network or from the Internet. Support for WPA/WPA2 standards ensure that you'll be able to use the best possible encryption method, regardless of your client devices. In addition, this router utilizes dual active firewalls (SPI and NAT) to prevent potential attacks from across the Internet.

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

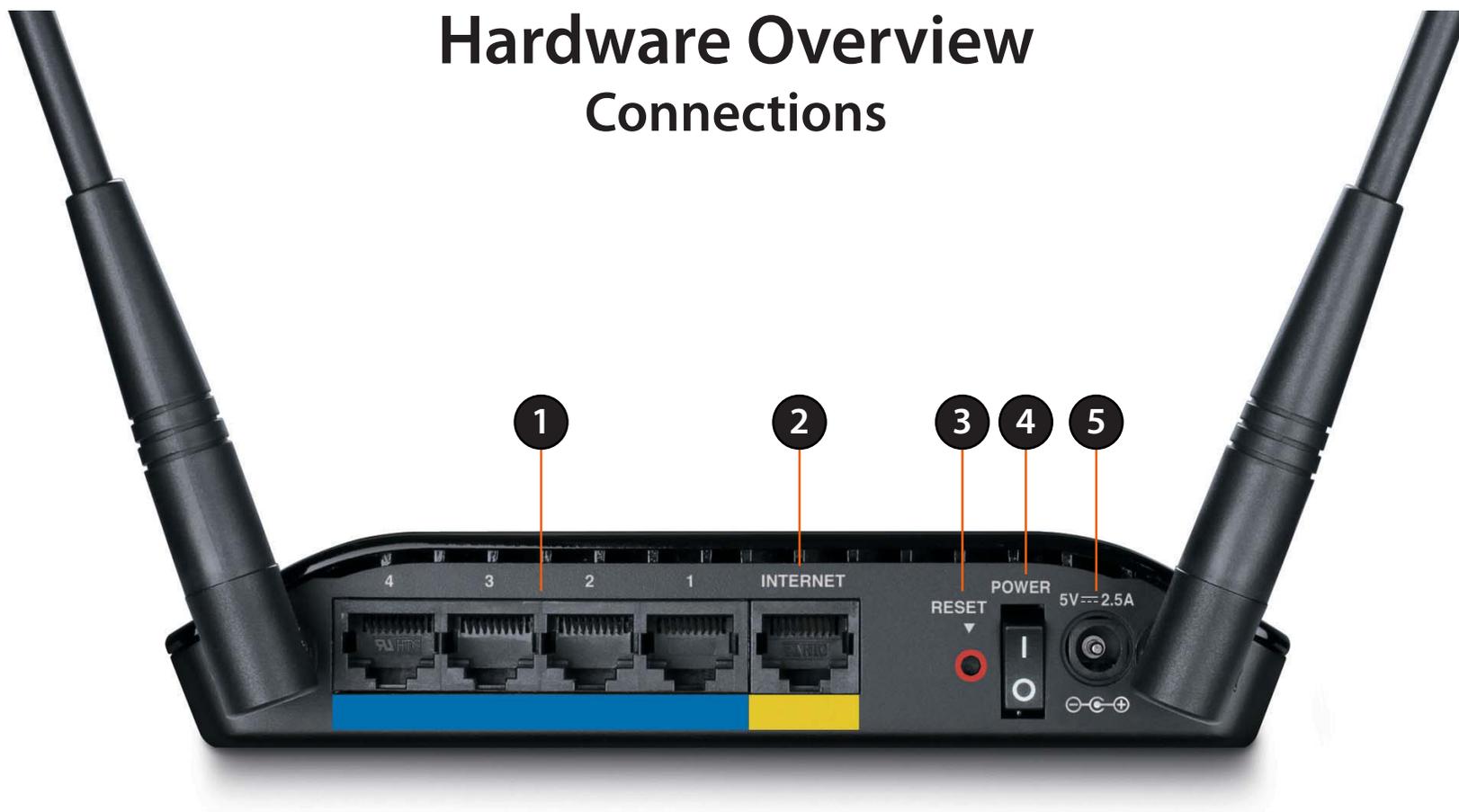
# Features

- **Faster Wireless Networking** - The DIR-815 provides up to 300Mbps\* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11n wireless router gives you the freedom of wireless networking at speeds 650% faster than 802.11g.
- **Compatible with 802.11a and 802.11g Devices** - The DIR-815 is still fully compatible with the IEEE 802.11a and 802.11g standards, so it can connect with existing 802.11a and 802.11g PCI, USB, and Cardbus adapters.
- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:
  - **Content Filtering** - Easily applied content filtering based on MAC Address, URL, and/or Domain Name.
  - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.
  - **Secure Multiple/Concurrent Sessions** - The DIR-815 can pass through VPN sessions. It supports multiple and concurrent IPsec and PPTP sessions, so users behind the DIR-815 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-815 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

\* Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g, and 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



<b>1</b>	LAN Ports (1-4)	Connect 10/100 Ethernet devices such as computers, switches, and hubs.
<b>2</b>	Internet Port	The auto MDI/MDIX Internet port is the connection for the Ethernet cable to the cable or DSL modem.
<b>3</b>	Reset Button	Pressing the Reset button restores the router to its original factory default settings.
<b>4</b>	Power Button	Use this switch to power on/power off the device.
<b>5</b>	Power Receptor	Receptor for the supplied power adapter.

# Hardware Overview

## WPS Button



<b>1</b>	WPS Button	Press the WPS button for 1 second to initiate the WPS process. The button will flash blue while a WPS connection is being established. The button will light solid blue for 5 seconds when the device has successfully been added to the network.
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# Hardware Overview

## LEDs



1	Power LED	A solid green light indicates a proper connection to the power supply. This LED will light orange during a factory reset or reboot. A slow blinking orange LED indicates that the Router has crashed during bootup.
2	Internet LED	A solid green light indicates the PPP negotiation has successfully completed. This LED blinks green during data transmission. A solid orange light indicates that the physical link is up, but the ISP service is down. This LED blinks orange when a session is dropped due to idle timeout.
3	WLAN LED (2.4GHz)	A solid light indicates that the 2.4GHz wireless segment is ready. This LED blinks during wireless data transmission.
4	WLAN LED (5.0GHz)	A solid light indicates that the 5.0GHz wireless segment is ready. This LED blinks during wireless data transmission.
5	LAN LEDs (1-4)	A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.
6	WCN LED	Insert a USB flash drive with WCN information. The LED will blink 3 times if it successfully transfers the wireless settings

# Installation

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

## Before you Begin

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

# Wireless Installation Considerations

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

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

## Connect to Cable/DSL/Satellite Modem

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

1. Place the router in an open and central location. Do not plug the power adapter into the router.
2. Unplug the modem's power adapter. Shut down your computer.
3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Internet port on the router.
4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.
5. Plug in your modem. Wait for the modem to boot (about 30 seconds).
6. Plug the power adapter to the router and connect to an outlet or power strip.
7. Use the power switch to power on the router. Wait about 30 seconds for the router to boot.
8. Turn on your computer.
9. Refer to "Getting Started" on page 13 to configure your router.

## Connect to Another Router

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

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

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

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

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

# Getting Started

The DIR-815 includes a Quick Router Setup Wizard CD. Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process.

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

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

When the autorun screen appears, click **Install**.



**Note:** It is recommended to write down the SSID and Security Key, followed by the login password on the provided CD holder.

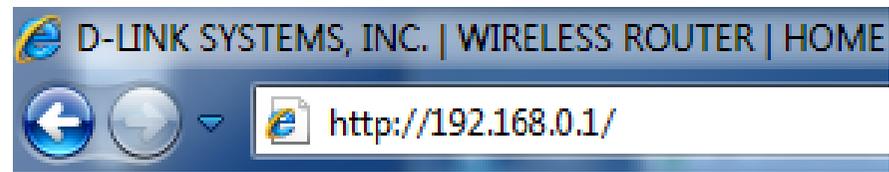
# Configuration

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

## Web-based Configuration Utility

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

You may also connect using the NetBIOS name in the address bar (<http://dlinkrouter>).



Enter **Admin** in the User Name field. Leave the password blank by default.

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

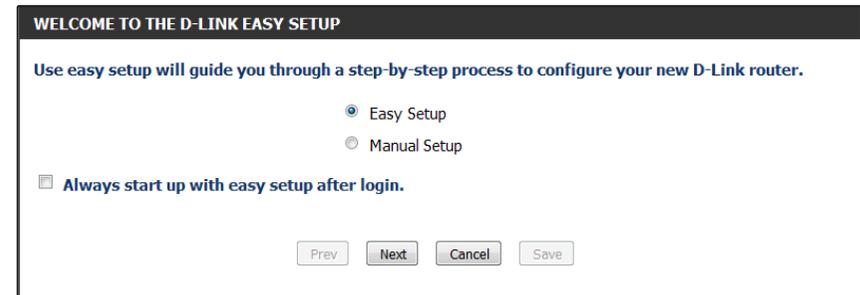
A screenshot of the login page for the D-Link router configuration utility. The page has an orange header with the word "LOGIN" in white. Below the header, the text "Login to the router :" is displayed. There are two input fields: "User Name" with the value "admin" and "Password" which is empty. A "Login"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

After logging into the router for the first time, the D-Link Easy Setup window will appear:

**Easy Setup:** Click this radio button to configure your router settings using a step-by-step wizard. Refer to the following page for more information on how to use the Easy Setup method to configure your Router.

**Manual Setup:** Click this radio button if you prefer to setup your router manually. Refer to "Setup" on page 20 for more information on how to configure your router manually.

**Always start up with easy setup after login:** Check this box if you want the Easy Setup window to appear as the initial window every time you log on the Router.



After choosing the appropriate option, click **Next**.

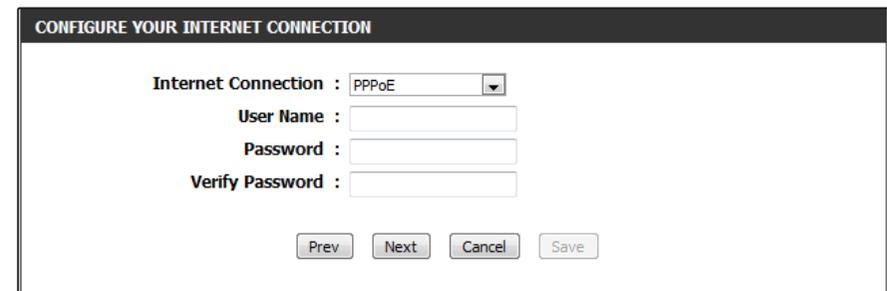
# Easy Setup

You can use the Easy Setup feature to configure your Router if you are planning to use the Static IP, Dynamic IP (DHCP), or PPPoE method to connect to the Internet. The Easy Setup feature also allows you to specify whether WPA/WPA2 wireless encryption or no encryption will be implemented on your wireless network.

Use the **Internet Connection** drop-down menu to select the type of Internet connection you will use. The available options are *PPPoE*, *Static IP*, and *Dynamic IP (DHCP)*.

If you selected **PPPoE**, enter your PPPoE user name and password.

Click **Next** to continue.



CONFIGURE YOUR INTERNET CONNECTION

Internet Connection : PPPoE

User Name :

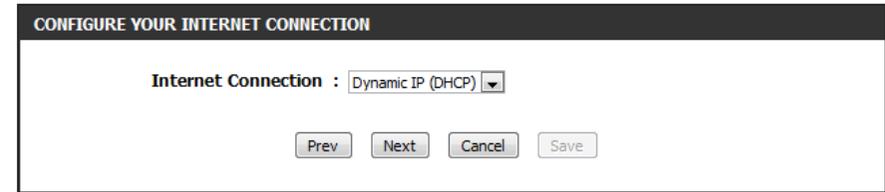
Password :

Verify Password :

Prev Next Cancel Save

If you are using DHCP to connect to the Internet, select **Dynamic IP (DHCP)** from the **Internet Connection** drop-down menu.

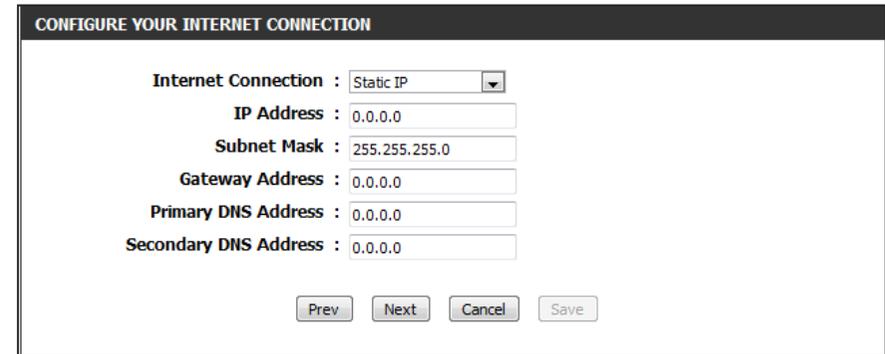
Click **Next** to continue.



The screenshot shows a dialog box titled "CONFIGURE YOUR INTERNET CONNECTION". Inside, there is a label "Internet Connection :" followed by a dropdown menu that has "Dynamic IP (DHCP)" selected. Below the dropdown are four buttons: "Prev", "Next", "Cancel", and "Save".

If you selected **Static IP**, enter the network settings supplied by your Internet provider.

Click **Next** to continue.



The screenshot shows the same dialog box titled "CONFIGURE YOUR INTERNET CONNECTION". The "Internet Connection :" dropdown menu now has "Static IP" selected. Below it are five input fields with the following values: "IP Address : 0.0.0.0", "Subnet Mask : 255.255.255.0", "Gateway Address : 0.0.0.0", "Primary DNS Address : 0.0.0.0", and "Secondary DNS Address : 0.0.0.0". The "Next" button is highlighted, indicating it is the active option.

The next Easy Setup window is used to configure your Router's wireless network settings:

1. Enter the name (SSID) you would like to assign to your wireless network in the **Network Name (SSID)** field.
2. Use the **Enable Security Mode** drop-down menu to select the wireless security method that you want to implement on your network. Easy Setup allows you to implement the WPA/WPA2 security method.

If you selected the **Enable WPA/WPA2 Wireless Security (enhanced)** option, enter the network key you would like to use on your wireless network.

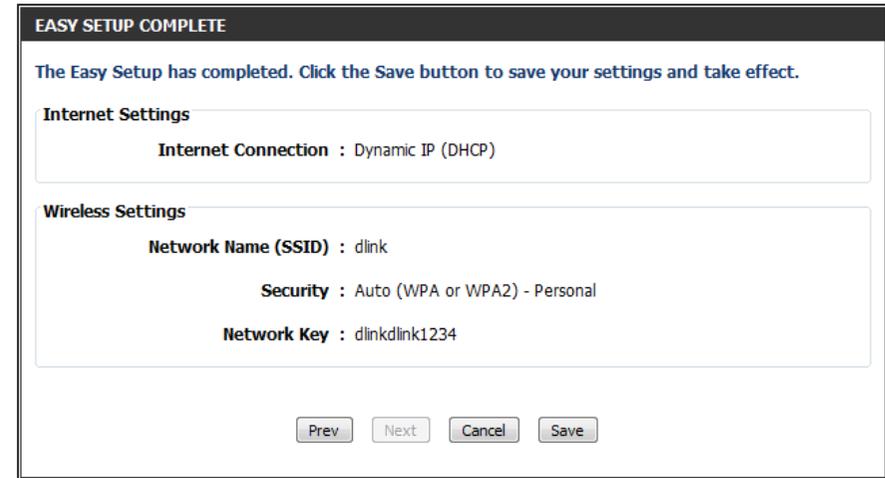
Click **Next** to continue.

The screenshot shows a window titled "CONFIGURE YOUR WIRELESS NETWORK". It contains two main fields: "Network Name (SSID) : dlink" and "Enable Security Mode : Disable Wireless Security (not recommended)". Below these fields are four buttons: "Prev", "Next", "Cancel", and "Save".

The screenshot shows the same window titled "CONFIGURE YOUR WIRELESS NETWORK". In this step, the "Enable Security Mode" is set to "Enable WPA/WPA2 Wireless Security (enhanced)". A new field, "Network Key :", has appeared below the security mode dropdown. The "Next" button is highlighted, indicating it is the active step.

The following window appears when Easy Setup has completed, displaying a summary of your Internet and wireless settings.

Click **Save** to save the configuration.

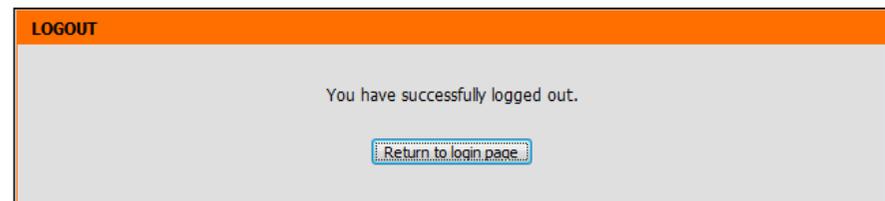


The following window appears to indicate that the settings are being saved:



When the Router has finished saving all the changes, the following window appears:

Click the **Return to login page** button to return to the main login page.

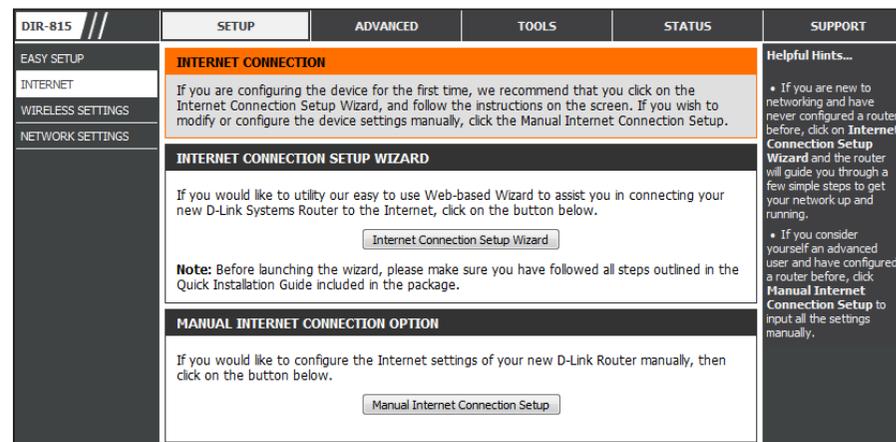


# Setup Internet

This section allows you to configure your Router’s Internet settings.

**Internet Connection Setup Wizard:** The Internet Connection Setup Wizard provides a quick method for configuring your Internet settings. To start the Internet Connection Setup Wizard, click the **Internet Connection Setup Wizard** button. Refer to “Internet Connection Setup Wizard” on page 21 for more information on how to use the Internet Connection Setup Wizard.

**Manual Internet Connection Option:** Click the **Manual Internet Connection Setup** button if you want to enter your Internet settings without running the Internet Connection Setup Wizard. Refer to “Manual Internet Connection Setup” on page 28 for more information on how to configure your Internet settings manually.



# Internet Connection Setup Wizard

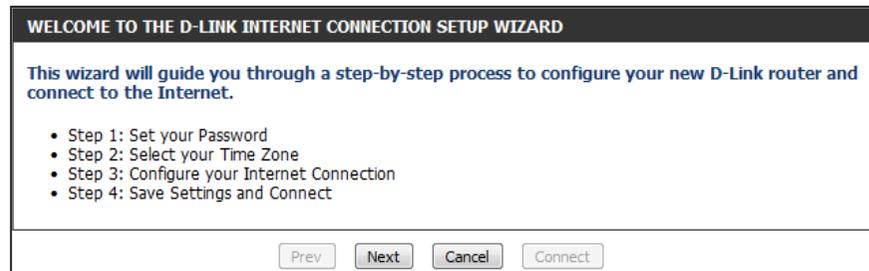
Click the **Internet Connection Setup Wizard** button to start the Internet Connection Setup Wizard.

The screenshot shows a web-based configuration interface for an Internet connection. It is divided into three main sections:

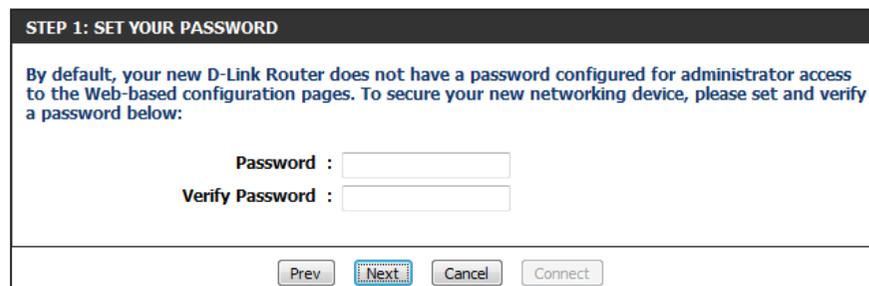
- INTERNET CONNECTION** (orange header): A grey box containing the text: "If you are configuring the device for the first time, we recommend that you click on the Internet Connection Setup Wizard, and follow the instructions on the screen. If you wish to modify or configure the device settings manually, click the Manual Internet Connection Setup."
- INTERNET CONNECTION SETUP WIZARD** (black header): A white box containing the text: "If you would like to utilize our easy to use Web-based Wizard to assist you in connecting your new D-Link Systems Router to the Internet, click on the button below." Below this text is a button labeled "Internet Connection Setup Wizard". A **Note** follows: "Before launching the wizard, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package."
- MANUAL INTERNET CONNECTION OPTION** (black header): A white box containing the text: "If you would like to configure the Internet settings of your new D-Link Router manually, then click on the button below." Below this text is a button labeled "Manual Internet Connection Setup".

The following window appears, summarizing the steps required to complete the Internet Connection Setup Wizard:

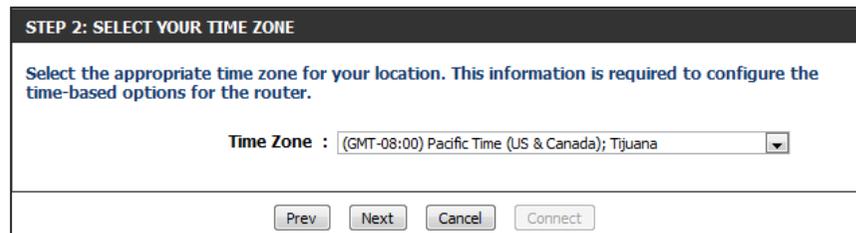
Click **Next** to continue.



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



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



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

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

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

**STEP 3: CONFIGURE YOUR INTERNET CONNECTION**

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

- DHCP Connection (Dynamic IP Address)**  
Choose this if your Internet connection automatically provides you with an IP Address. Most Cable Modems use this type of connection.
- Username / Password Connection (PPPoE)**  
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Username / Password Connection (PPTP)**  
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Username / Password Connection (L2TP)**  
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Static IP Address Connection**  
Choose this option if your Internet Setup Provider provided you with IP Address information that has to be manually configured.
- Russia PPTP (Dual Access)**  
Choose this option if your Internet connection requires a username and password to get online as well as a static route to access the Internet Service Provider's internal network. Certain ISPs in Russia use this type of connection.
- Russia PPPoE (Dual Access)**  
Choose this option if your Internet connection requires a username and password to get online as well as a static route to access the Internet Service Provider's internal network. Certain ISPs in Russia use this type of connection.

Prev Next Cancel Connect

**DHCP CONNECTION (DYNAMIC IP ADDRESS)**

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

MAC Address :  (optional)

Host Name :

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

Prev Next Cancel Connect

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

If your ISP requires you to enter a PPPoE service name, enter the service name in the **Service Name** field.

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

Click **Next** to continue.

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

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

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

Click **Next** to continue.

**SET USERNAME AND PASSWORD CONNECTION (PPPOE)**

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

Address Mode :  Dynamic IP  Static IP

IP Address :

User Name :

Password :

Verify Password :

Service Name :  (optional)

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

**SET USERNAME AND PASSWORD CONNECTION (PPTP)**

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

Address Mode :  Dynamic IP  Static IP

PPTP IP Address :

PPTP Subnet Mask :

PPTP Gateway IP Address :

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

User Name :

Password :

Verify Password :

If you selected **L2TP**, enter your L2TP username and password.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and L2TP server addresses.

Click **Next** to continue.

**SET USERNAME AND PASSWORD CONNECTION (L2TP)**

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

Address Mode :  Dynamic IP  Static IP

L2TP IP Address :

L2TP Subnet Mask :

L2TP Gateway IP Address :

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

User Name :

Password :

Verify Password :

Prev Next Cancel Connect

If you selected **Static**, enter your network settings supplied by your Internet provider.

Click **Next** to continue.

**SET STATIC IP ADDRESS CONNECTION**

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

IP Address :

Subnet Mask :

Gateway Address :

Primary DNS Address :

Secondary DNS Address :  (optional)

Prev Next Cancel Connect

If you selected **Russia PPTP (Dual Access)**, enter your PPTP username and password.

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

Click **Next** to continue.

If you selected **Russia PPPoE (Dual Access)**, enter your PPPoE username and password.

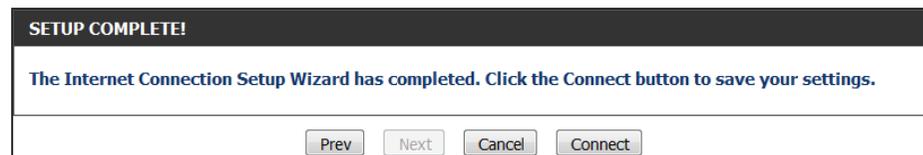
Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

If your ISP requires you to manually specify the WAN Physical IP settings, click the **Static IP** radio button and enter the required *IP Address, Subnet Mask, Gateway, and DNS Server Addresses* in their respective fields.

Click **Next** to continue.

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

Click **Connect** to save your settings.



The following window appears to indicate that the settings are being saved. When the Router has finished saving all the changes, the **Setup> Internet** window will open.

Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.



# Manual Internet Connection Setup

**Access Point** Check the **Enabled Access Point Mode** box if you want to  
**Mode:** disable NAT on the router and turn it into an Access Point.

**Internet** Use the **My Internet Connection is** drop-down menu to  
**Connection** select the mode that the router should use to connect to  
**Type:** the Internet.

**WAN**

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

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

Save Settings Don't Save Settings

**ACCESS POINT MODE**

Use this to disable NAT on the router and turn it into an Access Point.

Enabled Access Point Mode

**INTERNET CONNECTION TYPE**

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

**My Internet Connection is :** Dynamic IP (DHCP) ▼

## Manual Internet Connection Setup

### Static IP

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

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

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

**Default Gateway:** Enter the Gateway assigned by your ISP.

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

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

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

The screenshot shows a web interface for configuring a Static IP connection. At the top, a header reads "INTERNET CONNECTION TYPE". Below it, a blue instruction says "Choose the mode to be used by the router to connect to the Internet." A dropdown menu labeled "My Internet Connection is :" is set to "Static IP". A second header reads "STATIC IP ADDRESS INTERNET CONNECTION TYPE :". Below this, a blue instruction says "Enter the static address information provided by your Internet Service Provider (ISP)". The form contains several input fields: "IP Address :", "Subnet Mask :" (with "0.0.0.0" pre-filled), "Default Gateway :", "Primary DNS Server :", "Secondary DNS Server :" (with "(optional)" to its right), "MTU :" (with "1500" pre-filled), and "MAC Address :". A button labeled "Clone Your PC's MAC Address" is positioned below the MAC Address field. At the bottom of the form are two buttons: "Save Settings" and "Don't Save Settings".

Click the **Save Settings** button to save any changes made.

## Manual Internet Connection Setup

### Dynamic IP (DHCP)

Select **Dynamic IP (DHCP)** from the drop-down menu to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for cable modem services such as Comcast and Cox.

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

**Primary/Secondary DNS Server:** Enter the Primary and Secondary DNS server IP addresses assigned by your ISP. These addresses are usually obtained automatically from your ISP. Enter the value 0.0.0.0 if you did not specifically receive these from your ISP.

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

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

#### INTERNET CONNECTION TYPE

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

My Internet Connection is :

---

#### DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE :

Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password.

Host Name :

Primary DNS Server :

Secondary DNS Server :  (optional)

MTU :

MAC Address :

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

## PPPoE (Username/Password)

Select **PPPoE (Username/Password)** from the drop-down menu 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.

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

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

**User Name:** Enter your PPPoE user name.

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

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

**Reconnect** Use the radio buttons to specify the reconnect mode.

**Mode:** The user can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 83 for more information.

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

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

**INTERNET CONNECTION TYPE**

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

**My Internet Connection is :** PPPoE (Username / Password) ▼

---

**PPPOE INTERNET CONNECTION TYPE :**

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

**Address Mode :**  Dynamic IP  Static IP

**IP Address :**

**Username :**

**Password :**

**Verify Password :**

**Service Name :**  (optional)

**Reconnect Mode :**  Always ▼

On demand  Manual

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

**DNS Mode :**  Receive DNS from ISP  Enter DNS Manually

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**

**MAC Address :**

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

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

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

## PPTP

Select **PPTP (Point-to-Point Tunneling Protocol)** from the drop-down menu if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

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

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

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

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

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

**Username:** Enter your PPTP username.

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

**Reconnect Mode:** Use the radio buttons to specify the reconnect mode. The user can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 82 for more information.

**INTERNET CONNECTION TYPE**

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

**My Internet Connection is :** PPTP (Username / Password) ▼

---

**PPTP INTERNET CONNECTION TYPE :**

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

**Address Mode :**  Dynamic IP  Static IP

**PPTP IP Address :**

**PPTP Subnet Mask :**

**PPTP Gateway IP Address :**

**PPTP Server IP Address :**

**Username :**

**Password :**

**Verify Password :**

**Reconnect Mode :**  Always ▼   On demand  Manual

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

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**

**MAC Address :**

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

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

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

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

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

## L2TP

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

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

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

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

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

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

**Username:** Enter your L2TP username.

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

**Reconnect Mode:** Use the radio buttons to specify the reconnect mode. The user can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 83 for more information.

**INTERNET CONNECTION TYPE**

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

My Internet Connection is : L2TP (Username / Password) ▾

---

**L2TP INTERNET CONNECTION TYPE :**

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

**Address Mode :**  Dynamic IP  Static IP

**L2TP IP Address :**

**L2TP Subnet Mask :**

**L2TP Gateway IP Address :**

**L2TP Server IP Address :**

**Username :**

**Password :**

**Verify Password :**

**Reconnect Mode :**  Always ▾   On demand  Manual

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

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**

**MAC Address :**

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

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

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

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

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

## Russia PPTP (Dual Access)

Select **PPTP (Point-to-Point Tunneling Protocol)** from the drop-down menu if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

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

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

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

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

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

**Username:** Enter your PPTP username.

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

**Reconnect Mode:** Use the radio buttons to specify the reconnect mode. The user can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 83 for more information.

**INTERNET CONNECTION TYPE**

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

**My Internet Connection is :** Russia PPTP (Dual Access) ▼

---

**RUSSIA PPTP (DUAL ACCESS) :**

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

**Address Mode :**  Dynamic IP  Static IP

**PPTP IP Address :**

**PPTP Subnet Mask :**

**PPTP Gateway IP Address :**

**PPTP Server IP Address :**

**Username :**  MPPE :

**Password :**

**Verify Password :**

**Reconnect Mode :**  Always ▼   On demand  Manual

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

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**

**MAC Address :**

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

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

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

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

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

## Russia PPPoE (Dual Access)

Select **PPPoE (Username/Password)** from the drop-down menu 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.

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

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

**User Name:** Enter your PPPoE user name.

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

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

**Reconnect Mode:** Use the radio buttons to specify the reconnect mode. The user can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 83 for more information.

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

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

**INTERNET CONNECTION TYPE**

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

My Internet Connection is : Russia PPPoE (Dual Access) ▼

---

**PPPOE INTERNET CONNECTION TYPE :**

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

**Address Mode :**  Dynamic IP  Static IP

**IP Address :**

**Username :**  **MPPE :**

**Password :**

**Verify Password :**

**Service Name :**  (optional)

**Reconnect Mode :**  Always ▼   On demand  Manual

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

**DNS Mode :**  Receive DNS from ISP  Enter DNS Manually

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**

**MAC Address :**

---

**WAN PHYSICAL SETTINGS**

Dynamic IP  Static IP

**IP Address :**

**Subnet Mask :**

**Gateway :**

**Primary DNS Address :**

**Secondary DNS Address :**  (optional)

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

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

**WAN Physical Settings:** If your ISP requires you to manually specify the WAN Physical IP settings, click the **Static IP** radio button and enter the required *IP Address, Subnet Mask, Gateway, and DNS Server Addresses* in their respective fields.

Click the **Save Settings** button to save any changes made.

## Wireless Settings

If you want to configure the wireless settings on your router using the wizard, click **Wireless Connection Setup Wizard** and refer to “Wireless Connection Setup Wizard” on page 92.

Click **Add Wireless Device with WPS** if you want to add a wireless device using Wi-Fi Protected Setup (WPS) and refer to “Add Wireless Device with WPS Wizard” on page 95.

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

DIR-815	SETUP	ADVANCED	TOOLS	STATUS
EASY SETUP	<b>WIRELESS SETTINGS</b>			
INTERNET	The following Web-based wizards are designed to assist you in your wireless network setup and wireless device connection.			
WIRELESS SETTINGS	Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.			
NETWORK SETTINGS	<b>WIRELESS NETWORK SETUP WIZARD</b>			
	This wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.			
	<a href="#">Wireless Connection Setup Wizard</a>			
	<b>Note:</b> Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Router.			
	<b>ADD WIRELESS DEVICE WITH WPS (WI-FI PROTECTED SETUP) WIZARD</b>			
	This wizard is designed to assist you in connecting your wireless device to your wireless router. It will guide you through step-by-step instructions on how to get your wireless device connected. Click the button below to begin.			
	<a href="#">Add Wireless Device with WPS</a>			
	<b>MANUAL WIRELESS NETWORK SETUP</b>			
	If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new D-Link Systems Router manually, then click on the Manual Wireless Network Setup button below.			
	<a href="#">Manual Wireless Connection Setup</a>			

# Manual Wireless Settings

## 802.11n/b/g (2.4GHz)

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

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

**Wireless Network Name:** The 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 Selection:** The **Auto Channel Selection** setting can be selected to allow the DIR-815 to choose the channel with the least amount of interference.

**Wireless Channel:** Indicates the channel setting for the DIR-815. By default the channel is set to 1. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable **Auto Channel Selection**, this option will be greyed out.

**Transmission Rate:** Select the transmit rate. It is strongly suggested to select **Best (Automatic)** for best performance.

**WMM Enable:** WMM (Wi-Fi Multimedia) is QoS for your wireless network. Check this box to improve the quality of video and voice applications for your wireless clients. This feature is not available in 802.11n configurations.

**Enable Hidden Wireless:** Check this box if you do not want the SSID of your wireless network to be broadcast by the DIR-815. If the SSID is hidden, the SSID of the DIR-815 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-815 in order to connect to it.

**Wireless Security Mode:** Refer to "Wireless Security" on page 91 for more information regarding wireless security.

The screenshot shows two sections of a configuration interface. The top section is titled "WIRELESS NETWORK SETTINGS" and contains the following options:
 

- Wireless Band :** 2.4GHz Band
- Enable Wireless :**  Always
- Wireless Network Name :** dlink (Also called the SSID)
- Enable Auto Channel Selection :**
- Wireless Channel :** 1
- Transmission Rate :** Best (automatic) (Mbit/s)
- WMM Enable :**  (Wireless QoS)
- Enable Hidden Wireless :**  (Also called the SSID Broadcast)

 The bottom section is titled "WIRELESS SECURITY MODE" and contains:
 

- Security Mode :** Disable Wireless Security (not recommended)

Click the **Save Settings** button to save any changes made.

## 802.11n/a (5GHz)

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

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

**Wireless Network Name:** The 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 Selection:** The **Auto Channel Selection** setting can be selected to allow the DIR-815 to choose the channel with the least amount of interference.

**Wireless Channel:** Indicates the channel setting for the DIR-815. By default the channel is set to 36. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable **Auto Channel Selection**, this option will be greyed out.

**Transmission Rate:** Select the transmit rate. It is strongly suggested to select **Best (Automatic)** for best performance.

**WMM Enable:** WMM (Wi-Fi Multimedia) is QoS for your wireless network. Check this box to improve the quality of video and voice applications for your wireless clients. This feature is not available in 802.11n configurations.

**Enable Hidden Wireless:** Check this box if you do not want the SSID of your wireless network to be broadcast by the DIR-815. If the SSID is hidden, the SSID of the DIR-815 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-815 in order to connect to it.

**Wireless Security Mode:** Refer to "Wireless Security" on page 91 for more information regarding wireless security.

**WIRELESS NETWORK SETTINGS**

**Wireless Band :** 5GHz Band

**Enable Wireless :**  Always New Schedule

**Wireless Network Name :**  (Also called the SSID)

**Enable Auto Channel Selection :**

**Wireless Channel :**

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

**WMM Enable :**  (Wireless QoS)

**Enable Hidden Wireless :**  (Also called the SSID Broadcast)

**WIRELESS SECURITY MODE**

**Security Mode :** Disable Wireless Security (not recommended)

Click the **Save Settings** button to save any changes made.

# Network Settings

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

**Router Settings:** Use this section to configure the Router's local network settings.

**DHCP Server Settings:** Use this section to configure the DIR-815's built-in DHCP server settings.

**DHCP Reservations List:** Displays information about the devices that have a DHCP reservation from the DIR-815. The information includes the *Host Name, IP Address, MAC Address, and Expiration Time.*

**Number of Dynamic DHCP Clients:** Displays information about the devices that have a dynamic DHCP lease from the DIR-815. The information includes the *Host Name, IP Address, MAC Address, and Lease Expiration Time.*

**DHCP Reservation:** Use this section to create a new DHCP reservation or manage existing DHCP reservations.

The screenshot shows the web interface for the DIR-815 router. The top navigation bar includes 'DIR-815', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'NETWORK SETTINGS' section is highlighted in orange and contains instructions for configuring internal network settings. Below it are sections for 'ROUTER SETTINGS', 'DHCP SERVER SETTINGS', 'DHCP RESERVATIONS LIST', and 'NUMBER OF DYNAMIC DHCP CLIENTS'. The 'DHCP RESERVATIONS LIST' table shows one reservation for 'Mult-Laptop'. The 'NUMBER OF DYNAMIC DHCP CLIENTS' table shows one client for 'Mult-Laptop'. At the bottom, there is a section for '25 - DHCP RESERVATION' with a table for creating new reservations.

**Helpful Hints...**

- If you already have a DHCP server on your network or are using static IP addresses on all the devices on your network, uncheck **Enable DHCP Server** to disable this feature.
- If you have devices on your network that should always have fixed IP addresses, add a **DHCP Reservation** for each such device.

# Network Settings

## Router Settings

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

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

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

**Host Name:** Enter a Host Name to identify the DIR-815.

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

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

Click the **Save Settings** button to save any changes made.

**ROUTER SETTINGS**

Use this section to configure the internal network settings of your router. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address here, you may need to adjust your PC's network settings to access the network again.

**Router IP Address :**

**Default Subnet Mask :**

**Host Name :**

**Local Domain Name :**  (optional)

**Enable DNS Relay :**

## Network Settings

### DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-815 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DIR-815. 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.

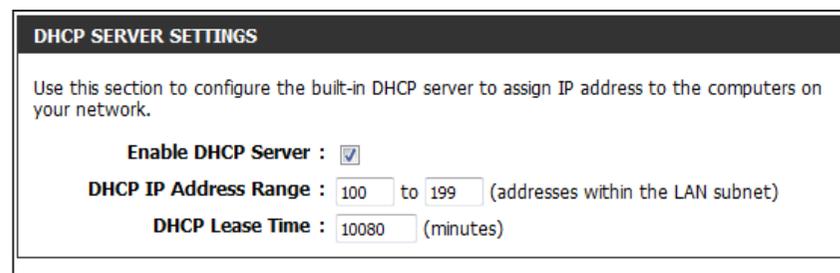
**Enable DHCP** Check this box to enable the DHCP server on your router.

**Server:** Uncheck to disable this function.

**DHCP IP Address** Enter the starting and ending IP addresses for the DHCP server's

**Range:** 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.*



The screenshot shows a web interface window titled "DHCP SERVER SETTINGS". Below the title is a descriptive text: "Use this section to configure the built-in DHCP server to assign IP address to the computers on your network." There are three configuration options: "Enable DHCP Server" with a checked checkbox, "DHCP IP Address Range" with input fields for "100" and "199" followed by the text "(addresses within the LAN subnet)", and "DHCP Lease Time" with an input field for "10080" followed by the text "(minutes)".

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

When you have finished configuring the new DHCP Server Settings, click the **Save Settings** button at the top or bottom of the window.



# Advanced Virtual Server

The DIR-815 can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The DIR-815 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DIR-815 are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling Virtual Server. Depending on the requested service, the DIR-815 redirects the external service request to the appropriate server within the LAN network.

The DIR-815 is also capable of port-redirection, meaning that incoming traffic to a particular port may be redirected to a different port on the server computer.

For a list of ports for common applications, please visit [http://support.dlink.com/faq/view.asp?prod\\_id=1191](http://support.dlink.com/faq/view.asp?prod_id=1191).

The Virtual Server window allows you to open a single port. If you would like to open a range of ports, refer to the next page.

**Enable** Check the box on the left side to enable the Virtual Server rule.

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

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

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

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

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

Click the **Save Settings** button to save any changes made.

The screenshot shows the configuration interface for the Virtual Server feature on a D-Link DIR-815 router. The main panel is titled "VIRTUAL SERVER" and includes a description: "The Virtual Server option allows you to define a single public port on your router for redirection to an internal LAN IP Address and Private LAN port if required. This feature is useful for hosting online services such as FTP or Web Servers." Below this are "Save Settings" and "Don't Save Settings" buttons.

The "32 - VIRTUAL SERVERS LIST" section shows a table with the following structure:

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

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

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

# Port Forwarding

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

**Enable Checkbox:** Tick the checkbox on the left side to enable the Port Forwarding rule.

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

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

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

**Traffic Type:** Select **TCP**, **UDP**, or **All** from the drop-down menu.

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

Click the **Save Settings** button to save any changes made.

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
VIRTUAL SERVER	<b>PORT FORWARDING</b>				Helpful Hints... <ul style="list-style-type: none"> <li>Check the <b>Application Name</b> drop-down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop-down menu to fill out the appropriate fields.</li> <li>You can select your computer from the list of DHCP clients in the <b>Computer Name</b> drop-down menu, or enter the IP address manually of the computer you would like to open the specified port to.</li> <li>Select a schedule for when the port forwarding will be enabled. If you do not see the schedule you need in the list of schedules, go to the <b>Tools -&gt; Schedules</b> screen and create a new schedule.</li> </ul>
PORT FORWARDING	This option is used to open multiple ports or a range of ports in your router and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in the format, Port Ranges (100-150). This option is only applicable to the INTERNET session. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
APPLICATION RULES	<b>32 -- PORT FORWARDING RULES</b>				
QOS ENGINE	Remaining number of rules that can be created: 32				
NETWORK FILTER			<b>Ports to Open</b>		
WEBSITE FILTER	<input type="checkbox"/>	Name	<< Application Name	Public Port ~	Traffic Type All
FIREWALL SETTINGS		IP Address	<< Computer Name	Private Port ~	Schedule Always
ROUTING	<input type="checkbox"/>	Name	<< Application Name	Public Port ~	Traffic Type All
ADVANCED WIRELESS		IP Address	<< Computer Name	Private Port ~	Schedule Always
WI-FI PROTECTED SETUP	<input type="checkbox"/>	Name	<< Application Name	Public Port ~	Traffic Type All
ADVANCED NETWORK		IP Address	<< Computer Name	Private Port ~	Schedule Always
IPv6	<input type="checkbox"/>	Name	<< Application Name	Public Port ~	Traffic Type All
IPv6 FIREWALL		IP Address	<< Computer Name	Private Port ~	Schedule Always

# Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-815. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the firewall (public) ports associated with the trigger port to open them for inbound traffic.

**Enable Checkbox:** Check the box on the left side to enable the Application Rule.

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

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

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

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

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

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

Click the **Save Settings** button to save any changes made.

	Port	Traffic Type	Schedule
<input type="checkbox"/>	Trigger Firewall	Protocol All	Schedule Always
<input type="checkbox"/>	Trigger Firewall	Protocol All	Schedule Always
<input type="checkbox"/>	Trigger Firewall	Protocol All	Schedule Always
<input type="checkbox"/>	Trigger Firewall	Protocol All	Schedule Always

**Helpful Hints...**

- Use this feature if you are trying to execute one of the listed network applications and it is not communicating as expected.
- Use the **Application Name** drop-down menu to view a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop-down menu to fill out the appropriate fields.

## QoS Engine

The QoS Engine option helps improve your network gaming performance by prioritizing applications. By default the QoS Engine settings are disabled and application priority is not classified automatically.

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

**Automatic Uplink Speed:** This option is enabled by default when the QoS Engine option is enabled. This option will allow your router to automatically determine the uplink speed of your Internet connection.

**Measured Uplink Speed:** This displays the detected uplink speed.

**Manual Uplink Speed:** The speed at which data can be transferred from the router to your ISP. This is determined by your ISP. ISP's often define speed as a download/upload pair. For example, 1.5Mbits/284Kbits. Using this example, you would enter 284. Alternatively you can test your uplink speed with a service such as [www.dslreports.com](http://www.dslreports.com).

**Connection Type:** By default, the router automatically determines whether the underlying connection is an xDSL/Frame-relay network or some other connection type (such as cable modem or Ethernet), and it displays the result as Detected xDSL or Frame Relay Network. If you have an unusual network connection in which you are actually connected via xDSL but for which you configure either "Static" or "DHCP" in the Internet settings, setting this option to xDSL or Other Frame Relay Network ensures that the router will recognize that it needs to shape traffic slightly differently in order to give the best performance. Choosing xDSL or Other Frame Relay Network causes the measured uplink speed to be reported slightly lower than before on such connections, but gives much better results.

**Detected xDSL or Other Frame Relay Network:** When **Connection Type** is set to auto-detect, the automatically detected connection type is displayed here.

The screenshot shows the QoS Engine configuration page for a DIR-815 router. The page is divided into several sections:

- QOS ENGINE:** A header section with a description: "Use this section to configure D-Link's Smart QoS. The QoS Engine improves your online gaming experience by ensuring that your game traffic is prioritized over other network traffic, such as FTP or Web." It includes "Save Settings" and "Don't Save Settings" buttons.
- QOS ENGINE SETUP:** The main configuration area containing:
  - Enable QoS Engine:** A checkbox that is currently unchecked.
  - Automatic Uplink Speed:** A checkbox that is currently unchecked.
  - Measured Uplink Speed:** Displayed as "Not Estimated".
  - Manual Uplink Speed:** A text input field followed by "kbps" and a "Select Transmission Rate" dropdown menu.
  - Connection Type:** A dropdown menu.
  - Detected xDSL or Other Frame Relay Network:** A text field showing the detected connection type.
- Helpful Hints...** A sidebar on the right with a note: "Some experimentation and performance measurement may be required to converge on the optimal value."

Click the **Save Settings** button to save any changes made.

# Network Filter

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

**Configure MAC Filtering:** Select **Turn MAC Filtering OFF**, **Turn MAC Filtering ON** and **Filtering: ALLOW** computers listed to access the network, or **Turn MAC Filtering ON** and **DENY** computers listed to access the network from the drop-down menu.

**Enable Checkbox:** Check the box on the left side to enable the Network Filter.

**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 **Computer Name** drop-down menu and click << to copy that MAC Address.

**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. Click the **New Schedule** button to create your own times in the **Tools > Schedules** section.

Click the **Save Settings** button to save any changes made.

The screenshot shows the configuration page for the Network Filter on a D-Link DIR-815 router. The interface includes a navigation menu on the left with options like VIRTUAL SERVER, PORT FORWARDING, APPLICATION RULES, QOS ENGINE, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ROUTING, ADVANCED WIRELESS, WI-FI PROTECTED SETUP, ADVANCED NETWORK, IPv6, and IPv6 FIREWALL. The main content area is titled 'MAC ADDRESS FILTER' and contains the following text: 'The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/Internet access.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. The next section is '32 -- MAC FILTERING RULES', which includes a configuration area with a dropdown menu for 'Turn MAC Filtering ON and DENY computers listed to access the network' and a status indicator 'Remaining number of rules that can be created: 32'. Below this is a table with columns for 'MAC Address', 'DHCP Client List', and 'Schedule'. The table contains six rows, each with a checkbox, a text input field for the MAC address, a '<<' button, a 'Computer Name' dropdown menu, an 'Always' dropdown menu, and a 'New Schedule' button. The rightmost section is 'Helpful Hints...' with three bullet points: 'Create a list of MAC addresses and choose whether to allow or deny them access to your network.', 'Computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu and click the arrow to add that device's MAC to the list.', and 'Use the Always drop down menu if you have previously defined a schedule in the router. If not, click on the New Schedule button to add one.'

# Website Filter

Website Filters are used to allow you to set up a list of Web sites that can be viewed by multiple users through the network. To use this feature select the appropriate Web Filtering option, enter the domain or website, and click **Save Settings**.

**Configure Web Filtering:** Select **Turn OFF WEBSITE FILTERING, ALLOW computers access to ONLY these sites, or DENY computers access to ONLY these sites** from the drop-down menu.

**Enable Checkbox:** Check the box on the left side to enable the Website Filter.

**Website URL:** Enter the keywords or URLs that you want to allow or block.

**Schedule:** The schedule of time when the Website Filter will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. Click the **New Schedule** button to create your own times in the **Tools > Schedules** section.

Click the **Save Settings** button to save any changes made.

The screenshot shows the configuration page for the Website Filter on a DIR-815 device. The interface is divided into a sidebar and a main content area. The sidebar contains various configuration categories, with 'WEBSITE FILTER' selected. The main content area has a top navigation bar with 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT' tabs. Below this, there's a 'WEBSITE FILTER' section with a description and 'Save Settings' and 'Don't Save Settings' buttons. The '32 - WEBSITE FILTERING RULES' section is active, showing a dropdown menu set to 'DENY computers access to ONLY these sites' and a message indicating 32 remaining rules. A table with two columns, 'Website URL' and 'Schedule', contains 15 rows. Each row has a checkbox, an input field for the URL, a dropdown menu for the schedule (all set to 'Always'), and a 'New Schedule' button. A 'Helpful Hints...' sidebar on the right provides additional instructions.

# Firewall Settings

A firewall protects your network from the outside world. The DIR-815 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

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

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

Carry out the following to create a DMZ host:

1. Check the **Enable DMZ** box.
2. Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication in the DMZ IP address field. To specify an existing DHCP client, use the **Computer Name** drop-down to select the computer that you want to make a DMZ host. If selecting a computer that is a DHCP client, be sure to make a static reservation in the **Setup > Network Settings** page so that the IP address of the DMZ machine does not change.
3. Click the **Save Settings** button to add the new DMZ host.

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

The screenshot shows the configuration interface for the DIR-815 router's firewall settings. The left sidebar lists various configuration categories, with 'FIREWALL SETTINGS' selected. The main content area is divided into several sections:

- FIREWALL & DMZ SETTINGS:** Contains an introductory text about firewall rules and two buttons: 'Save Settings' and 'Don't Save Settings'.
- FIREWALL SETTINGS:** Features a single checkbox labeled 'Enable SPI'.
- DMZ HOST:** Includes a text description of the DMZ option, a 'Note' about security risks, an 'Enable DMZ' checkbox, a 'DMZ IP Address' input field with a '<<' button, and a 'Computer Name' dropdown menu.
- 32 -- FIREWALL RULES:** Shows a table for creating rules. The table has columns for 'Name', 'Source', 'Dest', 'Protocol', and 'Port Range'. Below the table are an 'Action' dropdown menu (set to 'Allow') and a 'New Schedule' button.

On the right side of the interface, there is a 'Helpful Hints...' section with two bullet points:
 

- DMZ:** Only enable the DMZ option as a last resort. If you are having trouble using an application from a computer behind the router, first try opening ports associated with the application in the Advanced Port Forwarding section.
- Firewall:** Firewall Rules are an advanced feature used to deny or allow traffic from passing through the device. You can create detailed rules for the device. Please refer to the manual for more details and examples.

# Firewall Settings

## Firewall Rules

Use the Firewall Rules section to create/modify firewall rules.

**Enable Checkbox:** Check the box on the left side to enable the firewall rule.

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

**Action:** Use the drop-down menu to *Allow* or *Deny* transport of the data packets according to the criteria defined in the firewall rule.

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

Enter the first source IP address in the range in the adjacent top **IP Address** field.

Enter the last source IP address in the range in the **IP Address** field below.

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

Enter the first destination IP address in the range in the adjacent top **IP Address** field.

Enter the last destination IP address in the range in the **IP Address** field below.

**32 -- FIREWALL RULES**

Remaining number of rules that can be created: 32

		Interface	IP Address	Protocol	
<input type="checkbox"/>	Name <input type="text"/>	Source ▾	<input type="text"/>	All ▾	Always ▾ New Schedule
	Action Allow ▾	Dest ▾	<input type="text"/>	Port Range <input type="text"/>	
<input type="checkbox"/>	Name <input type="text"/>	Source ▾	<input type="text"/>	All ▾	Always ▾ New Schedule
	Action Allow ▾	Dest ▾	<input type="text"/>	Port Range <input type="text"/>	
<input type="checkbox"/>	Name <input type="text"/>	Source ▾	<input type="text"/>	All ▾	Always ▾ New Schedule
	Action Allow ▾	Dest ▾	<input type="text"/>	Port Range <input type="text"/>	
<input type="checkbox"/>	Name <input type="text"/>	Source ▾	<input type="text"/>	All ▾	Always ▾ New Schedule
	Action Allow ▾	Dest ▾	<input type="text"/>	Port Range <input type="text"/>	

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

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

**Select Schedule:** Use the drop-down menu to schedule the time that the Firewall rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. Click the **New Schedule** button to create your own times in the **Tools > Schedules** section.

When you have finished configuring the firewall rules, click the **Save Settings** button at the top or bottom of the window to save any changes made.



## Advanced Wireless Settings

### 802.11n/b/g (2.4GHz)

**Transmit Power:** Set the transmit power of the antennas.

**Beacon Period:** 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.

**ADVANCED WIRELESS SETTINGS**

**Wireless Band :** 2.4GHz Band

**Transmit Power :** 100%

**Beacon interval :** 100 (msec, range: 20~1000, default: 100)

**RTS Threshold :** 2346 (range: 256~2346, default: 2346)

**Fragmentation :** 2346 (range: 1500~2346, default: 2346, even number only)

**DTIM interval :** 1 (range: 1~255, default: 1)

**Preamble Type :**  Short Preamble  Long Preamble

**Wireless Mode :** 802.11 Mixed(n/g/b)

**Band Width :** 20/40 MHz(Auto)

**Short Guard Interval :**

**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:** Use the radio buttons to specify whether the Router should use the **Short Preamble** or **Long Preamble** type. The preamble type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the Router and roaming wireless adapters.

**Wireless Mode:** Use the drop-down menu to specify the wireless mode that will be used by the 2.4GHz band. The available options are *802.11n only*, *802.11 Mixed (g/b)*, and *802.11 Mixed (n/g/b)*.

**Band Width:** Use the drop-down menu to select the channel bandwidth. If you selected the *802.11 Mixed (g/b)* or *802.11 Mixed (n/g/b)* wireless mode, the available options are *20MHz* and *20/40MHz*. If selecting the *802.11n only* wireless mode, *20MHz* is the only available option.

**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.

Click the **Save Settings** button to save any changes made.

## Advanced Wireless Settings

### 802.11n/a (5GHz)

**Transmit Power:** Set the transmit power of the antennas.

**Beacon Period:** 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 Threshold:** 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:** Use the radio buttons to specify whether the Router should use the **Short Preamble** or **Long Preamble** type. The preamble type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the Router and roaming wireless adapters.

**Wireless Mode:** Use the drop-down menu to specify the wireless mode that will be used by the 5GHz band. The available options are *802.11a only*, *802.11n only*, and *802.11 Mixed (a/n)*.

**Band Width:** Use the drop-down menu to select the channel bandwidth. If you selected the *802.11n only* or *802.11 Mixed (a/n)* wireless mode, the available options are *20 MHz* and *20/40MHz*. The channel bandwidth can not be set if selecting the *802.11a only* wireless mode.

**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. This setting is unavailable if using the *802.11a only* wireless mode.

**ADVANCED WIRELESS SETTINGS**

**Wireless Band :** 5GHz Band

**Transmit Power :** 100%

**Beacon interval :** 100 (msec, range: 20~1000, default: 100)

**RTS Threshold :** 2346 (range: 256~2346, default: 2346)

**Fragmentation :** 2346 (range: 1500~2346, default: 2346, even number only)

**DTIM interval :** 1 (range: 1~255, default: 1)

**Preamble Type :**  Short Preamble  Long Preamble

**Wireless Mode :** 802.11 Mixed(a/n)

**Band Width :** 20/40 MHz(Auto)

**Short Guard Interval :**

Click the **Save Settings** button to save any changes made.

## Wi-Fi Protected Setup (WPS)

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

**Enable:** Enable the Wi-Fi Protected Setup feature.

**PIN Settings:** A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator (“admin” account) can change or reset the PIN.

**PIN:** Shows the current value of the router’s PIN.

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

**Generate New PIN:** Click this button to create a random number that is a valid PIN. This becomes the router’s PIN. You can then copy this PIN to the user interface of the registrar.

The screenshot shows the router's configuration page for WPS. The left sidebar lists various settings categories, with 'ADVANCED WIRELESS' selected. The main content area is titled 'WI-FI PROTECTED SETUP' and contains the following sections:

- WI-FI PROTECTED SETUP:** A section with an orange header containing explanatory text and 'Save Settings' / 'Don't Save Settings' buttons.
- WI-FI PROTECTED SETUP:** A section with a white header containing an 'Enable' checkbox (checked) and a 'Reset to Unconfigured' button.
- PIN SETTINGS:** A section with a white header showing the current PIN as '62507486' and buttons for 'Reset PIN to Default' and 'Generate New PIN'.
- ADD WIRELESS STATION:** A section with a white header containing a 'Connect your Wireless Device' button and 'Save Settings' / 'Don't Save Settings' buttons at the bottom.

The right sidebar, titled 'Helpful Hints...', contains the following instructions:

- Enable if other wireless devices you wish to include in the local network support Wi-Fi Protected Setup.
- Only "Admin" account can change security settings.
- Click **Connect your Wireless Device** to use Wi-Fi Protected Setup to add wireless devices to the wireless network.

**Add Wireless** Click the **Connect your Wireless Device** button to start Wireless Connection Setup Wizard. This wizard helps you add wireless devices to the wireless network.

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

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

Click the **Save Settings** button to save any changes made.

# Advanced Network

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

**WAN Ping:** Unchecking the box will not allow the DIR-815 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the Internet port to be “pinged”.

**WAN Ping Inbound Filter:** Select from the drop-down menu if you would like to apply the Inbound Filter to the WAN ping. Refer to page 47 for more information regarding Inbound Filter.

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

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

**Wireless Enhance Mode:** Check the **Wireless Enhance Mode** box to enable the router to forward all multicast streams from the Internet to the wireless station using a unicast stream. This feature helps improve the quality of multimedia applications for wireless users.

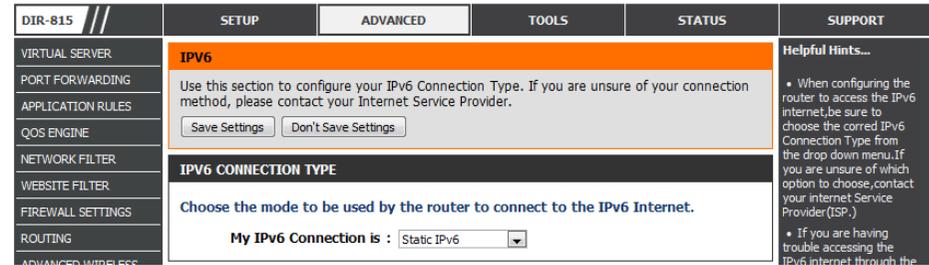
Click the **Save Settings** button to save any changes made.

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
VIRTUAL SERVER	<b>ADVANCED NETWORK SETTINGS</b>				<b>Helpful Hints...</b> <ul style="list-style-type: none"> <li>For added security, it is recommended that you disable the <b>WAN Ping Respond</b> option. Ping is often used by malicious Internet users to locate active networks or PCs.</li> <li>The WAN speed is usually detected automatically. If you are having problems connecting to the WAN, try selecting the speed manually.</li> <li>If you are having trouble receiving video on demand type of service from the Internet, make sure the Multicast Stream option is enabled.</li> </ul>
PORT FORWARDING	These options are for users that wish to change the LAN settings. We do not recommend changing these settings from factory default. Changing these settings may affect the behavior of your network. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
APPLICATION RULES	<b>UPNP</b>				
QOS ENGINE	Universal Plug and Play(UPnP) supports peer-to-peer Plug and Play functionality for network devices. <b>Enable UPnP :</b> <input type="checkbox"/>				
NETWORK FILTER	<b>WAN PING</b>				
WEBSITE FILTER	If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address. <b>Enable WAN Ping Response :</b> <input type="checkbox"/>				
FIREWALL SETTINGS	<b>WAN PORT SPEED</b>				
ROUTING	<b>WAN Port Speed :</b> <input type="text" value="Auto 10/100Mbps"/>				
ADVANCED WIRELESS	<b>MULTICAST STREAMS</b>				
WI-FI PROTECTED SETUP	<b>Enable Multicast Streams :</b> <input type="checkbox"/> <b>Wireless Enhance Mode :</b> <input type="checkbox"/> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
ADVANCED NETWORK					
IPv6					
IPv6 FIREWALL					

# IPv6

Use the IPv6 window to configure the mode that the Router will use to access an IPv6 Internet connection.

**My Internet** Use the drop-down menu to select the IPv6 **Connection is:** Internet Connection mode.



# IPv6

## Static IPv6

Select **Static IPv6** from the **My IPv6 Connection is** drop-down menu if your Router will use a static IPv6 address to connect to the Internet.

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

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

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

**LAN Address Autoconfiguration Settings:** Use this section to configure the IPv6 autoconfiguration settings.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is :	Static IPv6
WAN IPv6 ADDRESS SETTINGS	
Enter the IPv6 address information provided by your Internet Service Provider (ISP).	
IPv6 Address :	<input type="text"/>
Subnet Prefix Length :	<input type="text"/>
Default Gateway :	<input type="text"/>
Primary DNS Server :	<input type="text"/>
Secondary DNS Server :	<input type="text"/>
IPv6 Link-Local Address :	fe80::211:22ff:fe33:4445 /64
LAN IPv6 ADDRESS SETTINGS	
Use the section to configure the internal network settings of your router. The LAN IPv6 Link-Local Address is the IPv6 Address that you use to access the Web-based management interface. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again.	
LAN IPv6 Address :	<input type="text"/> /64
LAN IPv6 Link-Local Address :	fe80::211:22ff:fe33:4444 /64
LAN ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Autoconfiguration :	<input checked="" type="checkbox"/>
Autoconfiguration Type :	Stateless
Router Advertisement Lifetime :	<input type="text"/> (minutes)
<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>	

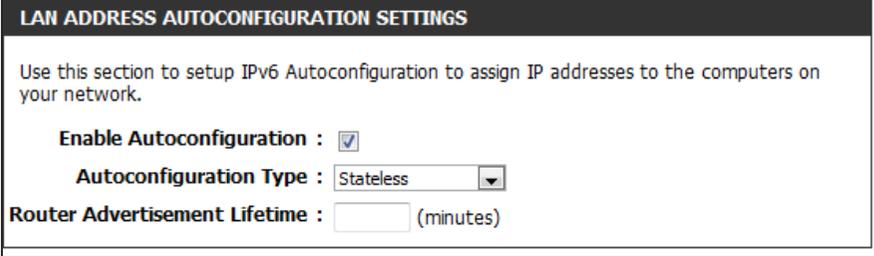
Click the **Save Settings** button to save any changes made.

## IPv6

### Static IPv6 (Stateless)

To configure the Router to use a Static IPv6 Stateless connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateless* option from the drop-down menu.
- Router Advertisement Lifetime:** Enter the Router Advertisement Lifetime (in minutes).



The screenshot shows a configuration window titled "LAN ADDRESS AUTOCONFIGURATION SETTINGS". Below the title is a descriptive text: "Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network." There are three settings: "Enable Autoconfiguration" with a checked checkbox, "Autoconfiguration Type" with a dropdown menu set to "Stateless", and "Router Advertisement Lifetime" with an empty input field followed by "(minutes)".

Click the **Save Settings** button to save any changes made.

## IPv6

### Static IPv6 (Stateful)

To configure the Router to use a Static IPv6 Stateful connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateful(DHCPv6)* option from the drop-down menu.
- IPv6 Address Range Start:** Enter the start IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Range End:** Enter the end IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Lifetime:** Enter the IPv6 Address Lifetime (in minutes).

**LAN ADDRESS AUTOCONFIGURATION SETTINGS**

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.

**Enable Autoconfiguration :**

**Autoconfiguration Type :** Stateful(DHCPv6) ▼

**IPv6 Address Range (Start) :** xxxxx :: 0003

**IPv6 Address Range (End) :** xxxxx :: 0064

**IPv6 Address Lifetime :** (minutes)

Click the **Save Settings** button to save any changes made.

# IPv6

## DHCPv6 (Stateful)

Select **Static IPv6** from the **My IPv6 Connection is** drop-down menu if your Router will use a static IPv6 address to connect to the Internet.

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

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

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

**Link-Local Address:**

**LAN Address Autoconfiguration Settings:** Use this section to configure the IPv6 autoconfiguration settings.

IPv6 CONNECTION TYPE	
Choose the mode to be used by the router to connect to the IPv6 Internet.	
My IPv6 Connection is :	Static IPv6
WAN IPv6 ADDRESS SETTINGS	
Enter the IPv6 address information provided by your Internet Service Provider (ISP).	
IPv6 Address :	<input type="text"/>
Subnet Prefix Length :	<input type="text"/>
Default Gateway :	<input type="text"/>
Primary DNS Server :	<input type="text"/>
Secondary DNS Server :	<input type="text"/>
IPv6 Link-Local Address :	fe80::211:22ff:fe33:4445 /64
LAN IPv6 ADDRESS SETTINGS	
Use the section to configure the internal network settings of your router. The LAN IPv6 Link-Local Address is the IPv6 Address that you use to access the Web-based management interface. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again.	
LAN IPv6 Address :	<input type="text"/> /64
LAN IPv6 Link-Local Address :	fe80::211:22ff:fe33:4444 /64
LAN ADDRESS AUTOCONFIGURATION SETTINGS	
Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.	
Enable Autoconfiguration :	<input checked="" type="checkbox"/>
Autoconfiguration Type :	Stateless
Router Advertisement Lifetime :	<input type="text"/> (minutes)
Save Settings	Don't Save Settings

Click the **Save Settings** button to save any changes made.

# IPv6

## DHCPv6 (Stateful)- Stateless Autoconfiguration

To configure the Router to use a Static IPv6 Stateless connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateless* option from the drop-down menu.
- Router Advertisement Lifetime:** Enter the Router Advertisement Lifetime (in minutes).

**LAN ADDRESS AUTOCONFIGURATION SETTINGS**

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.

**Enable Autoconfiguration :**

**Autoconfiguration Type :** Stateless

**Router Advertisement Lifetime :** (minutes)

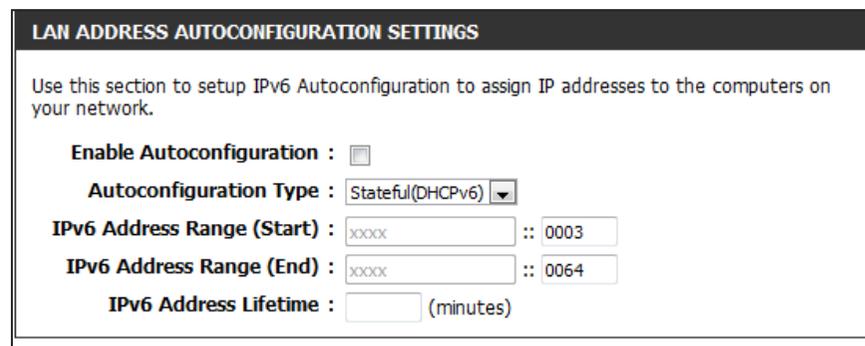
Click the **Save Settings** button to save any changes made.

## IPv6

### DHCPv6 (Stateful)- Stateful Autoconfiguration

To configure the Router to use a Static IPv6 Stateful connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateful(DHCPv6)* option from the drop-down menu.
- IPv6 Address Range Start:** Enter the start IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Range End:** Enter the end IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Lifetime:** Enter the IPv6 Address Lifetime (in minutes).



The screenshot shows the 'LAN ADDRESS AUTOCONFIGURATION SETTINGS' section. It includes a header, a descriptive paragraph, and several configuration fields:

- Enable Autoconfiguration:** A checkbox that is currently unchecked.
- Autoconfiguration Type:** A dropdown menu with 'Stateful(DHCPv6)' selected.
- IPv6 Address Range (Start):** A text input field containing 'xxxxx' followed by ':: 0003'.
- IPv6 Address Range (End):** A text input field containing 'xxxxx' followed by ':: 0064'.
- IPv6 Address Lifetime:** A text input field followed by '(minutes)'.

Click the **Save Settings** button to save any changes made.

# IPv6

## 6to4

Select **6to4** from the **My IPv6 Connection is** drop-down menu if your Router will use an IPv6 to IPv4 tunnel to connect to the Internet.

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

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

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

**LAN Address Autoconfiguration Settings:** Use this section to configure the IPv6 autoconfiguration settings.

IPv6 CONNECTION TYPE
<p>Choose the mode to be used by the router to connect to the IPv6 Internet.</p> <p>My IPv6 Connection is : <input type="text" value="6to4"/></p>
6TO4 SETTINGS
<p>Enter the IPv6 address information provided by your Internet Service Provider (ISP).</p> <p>6to4 Address : /16</p> <p>Primary DNS Server : <input type="text"/></p> <p>Secondary DNS Server : <input type="text"/></p> <p>IPv6 Link-Local Address : fe80::211:22ff:fe33:4445 /64</p>
LAN IPV6 ADDRESS SETTINGS
<p>Use the section to configure the internal network settings of your router. The LAN IPv6 Link-Local Address is the IPv6 Address that you use to access the Web-based management interface. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again.</p> <p>LAN IPv6 Address : /64</p> <p>LAN IPv6 Link-Local Address : fe80::211:22ff:fe33:4444 /64</p>
LAN ADDRESS AUTOCONFIGURATION SETTINGS
<p>Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.</p> <p>Enable Autoconfiguration : <input checked="" type="checkbox"/></p> <p>Autoconfiguration Type : <input type="text" value="Stateless"/></p> <p>Router Advertisement Lifetime : <input type="text"/> (minutes)</p>
<p><input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/></p>

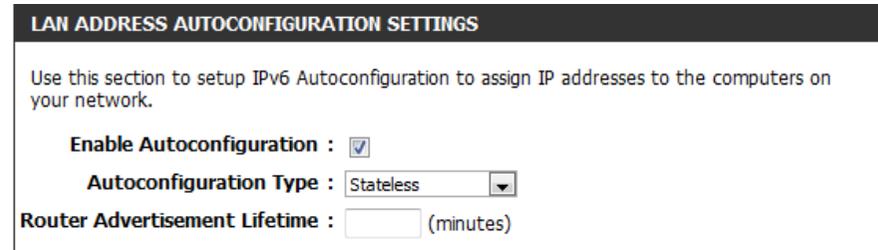
Click the **Save Settings** button to save any changes made.

# IPv6

## 6to4- Stateless Autoconfiguration

To configure the Router to use an IPv6 to IPv4 tunnel stateless autoconfiguration connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateless* option from the drop-down menu.
- Router Advertisement Lifetime:** Enter the Router Advertisement Lifetime (in minutes).



**LAN ADDRESS AUTOCONFIGURATION SETTINGS**

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.

**Enable Autoconfiguration :**

**Autoconfiguration Type :** Stateless

**Router Advertisement Lifetime :** (minutes)

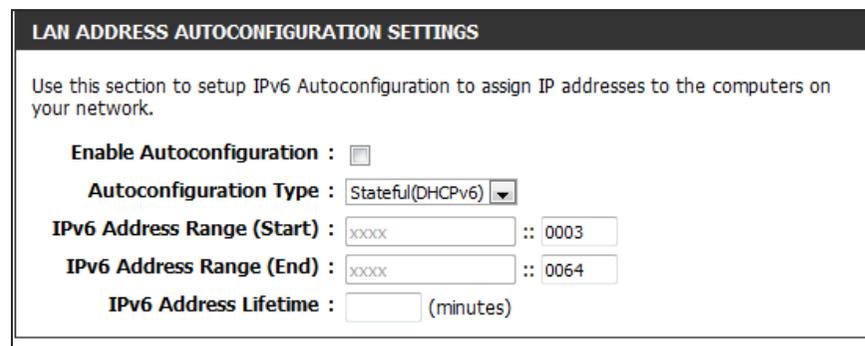
Click the **Save Settings** button to save any changes made.

## IPv6

### 6to4- Stateful (DHCPv6) Autoconfiguration

To configure the Router to use an IPv6 to IPv4 tunnel stateful autoconfiguration connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

- Enable Autoconfiguration:** Check to enable the Autoconfiguration feature.
- Autoconfiguration Type:** Select the *Stateful(DHCPv6)* option from the drop-down menu.
- IPv6 Address Range Start:** Enter the start IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Range End:** Enter the end IPv6 Address for the DHCPv6 range for your local computers.
- IPv6 Address Lifetime:** Enter the IPv6 Address Lifetime (in minutes).



The screenshot shows the 'LAN ADDRESS AUTOCONFIGURATION SETTINGS' section. It includes a header, a descriptive paragraph, and several configuration fields:

- Enable Autoconfiguration:** An unchecked checkbox.
- Autoconfiguration Type:** A dropdown menu with 'Stateful(DHCPv6)' selected.
- IPv6 Address Range (Start):** A text box containing 'xxxxx' followed by ':: 0003'.
- IPv6 Address Range (End):** A text box containing 'xxxxx' followed by ':: 0064'.
- IPv6 Address Lifetime:** An empty text box followed by '(minutes)'.

Click the **Save Settings** button to save any changes made.

# IPv6

## Link-local Only

Select **Link-local Only** from the **My IPv6 Connection is** drop-down menu if your Router will use the IPv6 link local method to connect to the Internet.

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

The screenshot shows a web-based configuration interface for IPv6 settings. It is divided into two main sections: 'IPv6 CONNECTION TYPE' and 'LAN IPV6 ADDRESS SETTINGS'. In the 'IPv6 CONNECTION TYPE' section, there is a heading 'Choose the mode to be used by the router to connect to the IPv6 Internet.' followed by a label 'My IPv6 Connection is :' and a dropdown menu currently set to 'Link-local Only'. The 'LAN IPV6 ADDRESS SETTINGS' section contains a paragraph of explanatory text and a label 'LAN IPv6 Link-Local Address : fe80::211:22ff:fe33:4444 /64'. At the bottom of the form are two buttons: 'Save Settings' and 'Don't Save Settings'.

Click the **Save Settings** button to save any changes made.

# IPv6 Firewall

The DIR-815's IPv6 Firewall feature allows you to configure which kind of IPv6 traffic is allowed to pass through the device. The DIR-815's IPv6 Firewall functions in a similar way to the IP Filters feature.

**Enable Checkbox:** Check the box on the left side to enable the IPv6 firewall rule.

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

**Action:** Use the radio buttons to *Allow* or *Deny* transport of the IPv6 data packets according to the criteria defined in the firewall rule.

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

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

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

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

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

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

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

Click the **Save Settings** button to save any changes made.

# Tools

## Admin

This page will allow you to change the Administrator password and configure the authentication settings. This window also allows you to enable Remote Management, via the Internet.

**Admin** Enter a new password for the Administrator Login Name.

**Password:** The administrator can make changes to the settings.

**Enable** Enables a challenge-response test to require users to type

**Graphical Authentication:** letters or numbers from a distorted image displayed on the screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.

**Enable Remote Management:** Remote management allows the DIR-815 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.

**Remote Admin Port:** Enter the port number that will be used to access the DIR-815.

Click the **Save Settings** button to save any changes made.

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	<b>ADMINISTRATOR SETTINGS</b>				Helpful Hints... • For security reasons, it is recommended that you change the password for the Admin account. Be sure to write down the new password to avoid having to reset the router in case they are forgotten.
TIME	The 'admin' account can access the management interface. The admin has read/write access and can change password. By default there is no password configured. It is highly recommended that you create a password to keep your router secure. Save Settings Don't Save Settings				
EMAIL SETTINGS	<b>ADMIN PASSWORD</b> Please enter the same password into both boxes, for confirmation. Password : <input type="text"/> Verify Password : <input type="text"/>				
SYSTEM	<b>ADMINISTRATION</b> Enable Graphical Authentication : <input type="checkbox"/> Enable Remote Management : <input type="checkbox"/> Remote Admin Port : <input type="text"/> Save Settings Don't Save Settings				
FIRMWARE					
DYNAMIC DNS					
SYSTEM CHECK					
SCHEDULES					

# Time

The Time window allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the Time Server. Daylight Saving can also be configured to automatically adjust the time when needed.

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

**Enable Daylight Saving:** Check this box if the country your are located in uses Daylight Saving time. Enter a start date and an end date for daylight saving time.

**Sync. Your Computer's Time Settings:** Click this button to synchronize the DIR-815's system clock to your computer's time settings.

**Automatic Time and Date Configuration:** NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. To enable NTP carry out the following:

1. Check the **Automatically synchronize with D-Link's Internet Time Server** box.
2. Choose the D-Link NTP server that you would like to synchronize with from the **NTP Server Used** drop-down menu.
3. Click the **Update Now** button to update the time on the Router clock so that it is synchronized with the D-Link Internet Time Server.

**Set the Time and Date Manually:** Use this section to configure the time manually. To configure the time manually, use the drop-down menus to select the appropriate *Year, Month, Day, Hour, Minute,* and *Second*.

Click the **Save Settings** button to save any changes made.

The screenshot shows the 'TIME AND DATE' configuration page in the DIR-815 web interface. The page is organized into several sections:

- TIME AND DATE:** Contains an introductory text and two buttons: 'Save Settings' and 'Don't Save Settings'.
- TIME AND DATE CONFIGURATION:** Displays the current time as '2000/01/01 01:06:21', a 'Time Zone' dropdown menu set to '(GMT+08:00) Taipei', and an 'Enable Daylight Saving' checkbox. A 'Sync. your computer's time settings' button is also present.
- AUTOMATIC TIME AND DATE CONFIGURATION:** Features a checkbox for 'Automatically synchronize with D-Link's Internet time server', an 'NTP Server Used' dropdown menu, and an 'Update Now' button.
- SET THE TIME AND DATE MANUALLY:** Provides individual dropdown menus for Year (2010), Month (May), Day (19), Hour (15), Minute (37), and Second (18), along with 'Save Settings' and 'Don't Save Settings' buttons.

On the right side of the interface, there is a 'Helpful Hints...' section with a bullet point: 'Either enter the time manually by clicking the Sync. Your Computers Time Settings button, or use the Automatic Time Configuration option to have your router synchronize with a time server on the Internet.'

## Email Settings

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

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

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

**Email Subject:** Enter the text that you want to appear in the subject line of the e-mail that is sent.

**SMTP Server Address:** Enter the SMTP server address for sending email. If your SMTP server requires authentication, select this option.

**Account Name:** Enter your account for sending email.

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

**Send Mail Now:** Click this button to send a test email from the Router to verify that the email settings have been configured correctly.

Click the **Save Settings** button to save any changes made.

DIR-815 //	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	<b>EMAIL SETTINGS</b>				Helpful Hints... • You may want to make the email settings similar to those of your email client program.
TIME	The Email feature can be used to send the system log files, router alert messages. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
<b>EMAIL SETTINGS</b>	<b>EMAIL SETTINGS</b>				
SYSTEM	<b>From Email Address :</b> <input type="text"/> <b>To Email Address :</b> <input type="text"/> <b>Email Subject :</b> <input type="text"/> <b>SMTP Server Address :</b> <input type="text"/> <b>Account Name :</b> <input type="text"/> <b>Password :</b> <input type="password"/> <b>Verify Password :</b> <input type="password"/> <input type="button" value="Send Mail Now"/>				
FIRMWARE	<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
DYNAMIC DNS					
SYSTEM CHECK					
SCHEDULES					

# System

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

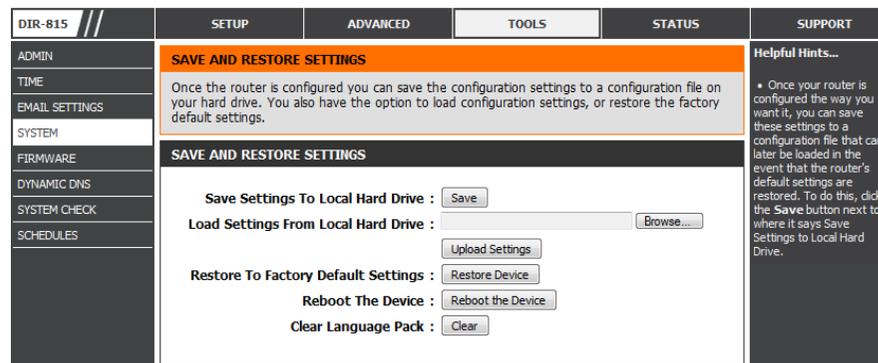
**Save Settings to Local Hard Drive:** Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. A file dialog will appear, allowing you to select a location and file name for the settings.

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

**Reboot Device:** Click to reboot the router.

**Clear Language Pack:** If you previously installed a language pack and want to revert all the menus on the Router interface back to the default language settings, click the **Clear** button.



# Firmware

Use the Firmware window to upgrade the firmware of the Router and install language packs. If you plan to install new firmware, make sure the firmware you want to use is on the local hard drive of the computer. If you want to install a new language pack, make sure that you have the language pack available. 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 Information:** This section displays information about the firmware that is loaded on the Router. Click the **Check Now** button to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

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

**Language Pack Upgrade:** If you want to change the Router's language pack, click **Browse** to locate the language pack. Click **Upload** to complete the load the new language pack.

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	<b>FIRMWARE UPDATE</b>				<b>Helpful Hints...</b> • <b>Firmware Update</b> are released periodically to improve the functionality of your router and also to add features. If you run into a problem with a specific feature of the router, check our support site by clicking on the <b>Click here to check for an upgrade on our support site</b> and see if an updated version of firmware is available for your router.
TIME	There may be new firmware for your router to improve functionality and performance. <a href="#">Click here to check for an upgrade on our support site.</a>				
EMAIL SETTINGS	To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the firmware upgrade.				
SYSTEM	The language pack allows you to change the language of the user interface on the router. We suggest that you upgrade your current language pack if you upgrade the firmware. This ensures that any changes in the firmware are displayed correctly.				
FIRMWARE	To upgrade the language pack, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the language pack upgrade.				
DYNAMIC DNS	<b>FIRMWARE INFORMATION</b>				
SYSTEM CHECK	Current Firmware Version : 1.00 Current Firmware Date : Mon 10 May 2010 Check Online Now for Latest Firmware Version : <input type="button" value="Check Now"/>				
SCHEDULES	<b>FIRMWARE UPGRADE</b>				
	Note: Some firmware upgrades reset the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration.				
	To upgrade the firmware, your PC must have a wired connection to the router. Enter the name of the firmware upgrade file, and click on the Upload button.				
	Upload : <input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/>				
	<b>LANGUAGE PACK UPGRADE</b>				
	Upload : <input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/>				

## Dynamic DNS

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

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

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

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

**User Account:** Enter the Username for your DDNS account.

**Password:** Enter the Password for your DDNS account.

**DDNS Account Testing:** Click this button to verify that the DDNS account user name and password have been entered correctly.

Click the **Save Settings** button to save any changes made.

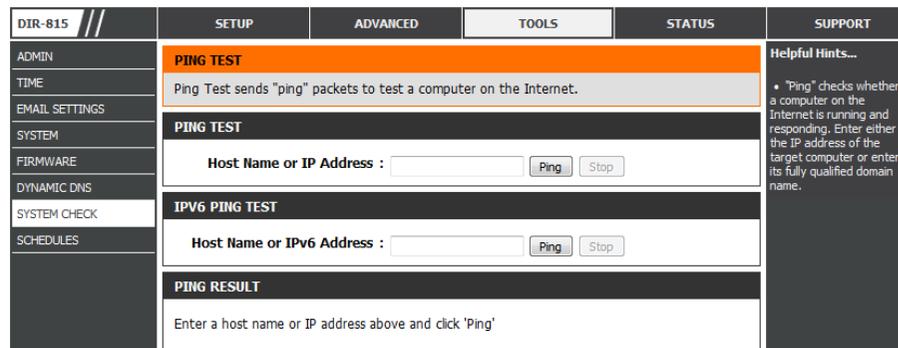
DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	<b>DYNAMIC DNS</b>				Helpful Hints... • To use this feature, you must first have a Dynamic DNS account from one of the providers in the drop down menu.
TIME	<p>The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server no matter what your IP address is.</p> <p><a href="http://www.DLinkDDNS.com">Sign up for D-Link's Free DDNS service at www.DLinkDDNS.com.</a></p> <p>Save Settings   Don't Save Settings</p>				
EMAIL SETTINGS	<b>DYNAMIC DNS SETTINGS</b>				
SYSTEM	<p>Enable DDNS : <input type="checkbox"/></p> <p>Server Address : <input type="text"/></p> <p>Host Name : <input type="text"/></p> <p>User Account : <input type="text"/></p> <p>Password : <input type="text"/></p> <p>DDNS Account Testing</p> <p>Save Settings   Don't Save Settings</p>				
FIRMWARE					
DYNAMIC DNS					
SYSTEM CHECK					
SCHEDULES					

# System Check

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

**IPv6 Ping Test:** The IPv6 Ping Test is used to send IPv6 Ping packets to test if a computer is on the Internet. Enter the IPv6 Address that you wish to Ping, and click **Ping**. Click **Stop** to stop sending IPv6 Ping packets

**Ping Results:** The results of your Ping/IPv6 Ping attempts will be displayed here.



# Schedules

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

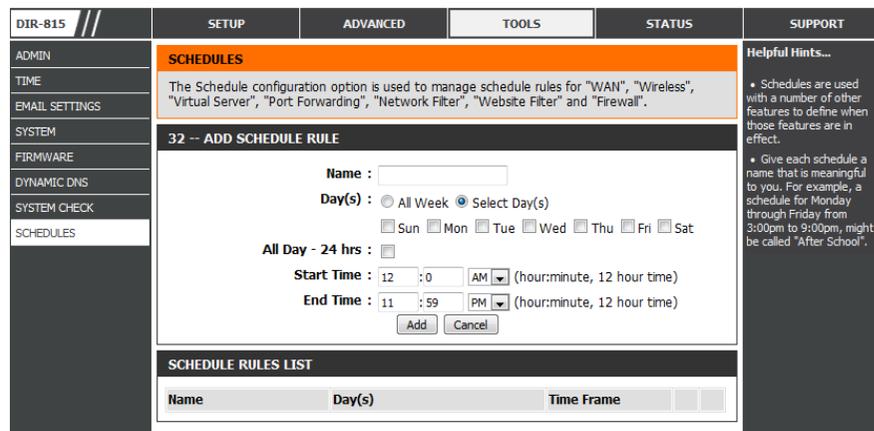
**Name:** Enter a name for your new schedule.

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

**Time:** Check **All Day - 24hrs** or enter a *Start Time* and *End Time* for your schedule.

**Add:** Click **Add** to save your schedule. You must click the **Add** button for your schedules to go into effect.

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



# Status

## Device Info

This page displays the current information for the DIR-815. It will display the LAN, WAN (Internet), and Wireless information. If your Internet connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

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

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

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

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

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

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
DEVICE INFO	<b>DEVICE INFORMATION</b>				Helpful Hint...
LOGS	All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.				All of your LAN, Internet and WIRELESS 802.11n connection details are displayed here.
STATISTICS	<b>GENERAL</b>				
INTERNET SESSIONS	Time : 2000/01/01 01:12:32				
WIRELESS	Firmware Version : 1.00 Mon 10 May 2010				
IPv6	<b>WAN</b>				
	Connection Type : DHCP Client				
	Cable Status : Disconnected				
	Network Status : Disconnected				
	<input type="button" value="Renew"/> <input type="button" value="Release"/>				
	Connection Up Time : 0 Day 0 Hour 0 Min 0 Sec				
	MAC Address : 00:26:5a:19:11:01				
	IP Address : 0.0.0.0				
	Subnet Mask : 0.0.0.0				
	Default Gateway : 0.0.0.0				
	Primary DNS Server : 0.0.0.0				
	Secondary DNS Server : 0.0.0.0				
	<b>LAN</b>				
	MAC Address : 00:26:5a:19:11:00				
	IP Address : 192.168.0.1				
	Subnet Mask : 255.255.255.0				
	DHCP Server : Enabled				
	<b>WIRELESS LAN1</b>				
	Wireless Radio : Enabled				
	MAC Address : 00:26:5a:19:11:00				
	802.11 Mode : Mixed 802.11n, 802.11g and 802.11b				
	Channel Width : 20/40MHz				
	Channel : 1				
	Network Name (SSID) : dlink				
	Wi-Fi Protected Setup : Enabled/Unconfigured				
	Security : WPA/WPA2-PSK				
	<b>WIRELESS LAN2</b>				
	Wireless Radio : Enabled				
	MAC Address : 00:26:5a:19:11:00				
	802.11 Mode : Mixed 802.11n and 802.11a				
	Channel Width : 20/40MHz				
	Channel : 157				
	Network Name (SSID) : dlink_media				
	Wi-Fi Protected Setup : Enabled/Unconfigured				
	Security : Disabled				

# Logs

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

**Save Log File:** Click the **Save** button save the Router's log entries to a log file on your computer.

**Log Type:** Use the radio buttons to select the types of messages that you want to display from the log. **System**, **Firewall & Security**, and **Router Status** messages can be selected.

**Log Level:** There are three levels of message importance: **Critical**, **Warning**, and **Information**. Select the levels that you want displayed in the log.

**Log Files:** Use this section to view and manage the Router's log entries.

**First Page:** Click this button to view the first page of the Router logs.

**Last Page:** Click this button to view the last page of the Router logs.

**Previous:** Click this button to view the previous page of the Router logs.

**Next:** Click this button to view the next page of the Router logs.

**Clear:** Clears all of the log contents.

**Link to Log Settings:** Click this button to open the **Tools > Email Settings** screen so that you can change the Email configuration for sending logs.

The screenshot shows the 'VIEW LOG' configuration page for a DIR-815 router. The page has a navigation bar with tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains menu items: DEVICE INFO, LOGS, STATISTICS, INTERNET SESSIONS, WIRELESS, and IPv6. The main content area is titled 'VIEW LOG' and contains the following sections:

- VIEW LOG:** A text box stating 'The View Log displays the activities occurring on the DIR-815.' Below it are 'Save Settings' and 'Don't Save Settings' buttons.
- SAVE LOG FILE:** A section with the text 'Save Log File To Local Hard Drive.' and a 'Save' button.
- LOG TYPE & LEVEL:** A section with radio buttons for 'Log Type' (System, Firewall & Security, Router Status) and 'Log Level' (Critical, Warning, Information).
- LOG FILES:** A section with navigation buttons: 'First Page', 'Last Page', 'Previous', 'Next', 'Clear', and 'Link To Log Settings'. Below the buttons is the text 'Page 1 of 14' and a table of log entries.

Time	Message
Sat Jan 1 01:14:10 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:13:54 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:13:46 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:13:42 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:11:38 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:11:06 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:10:50 2000	DHCP: Client send DISCOVER.
Sat Jan 1 01:10:42 2000	DHCP: Client send DISCOVER.

On the right side of the page, there is a 'Helpful Hints...' section with two bullet points:

- Click on the Save button to save log file to local hard drive which can later send to the network administrator for troubleshooting. You can also select what type of event you would like to be logged from Log Type & Level.
- Check the log frequently to detect unauthorized network usage.

## Statistics

The screen below displays the **Traffic Statistics**. Here you can view the amount of packets that pass through the DIR-815 on both the WAN, LAN ports and both the 802.11n/g (2.4GHz) and 802.11n/a (5GHz) wireless bands. The traffic counter will reset if the device is rebooted.

**Refresh:** Click the **Refresh** button to refresh the Router's traffic statistics.

**Reset:** Click the **Reset** button to reset the Router's traffic statistics.

	Receive	Transmit
<b>Internet</b>	0 Packets	129 Packets
<b>LAN</b>	3306 Packets	2488 Packets
<b>WIRELESS 11n</b>	354152 Packets	1323 Packets

**Helpful Hints...**

- This is a summary displaying the number of packets that have passed between the Internet and the LAN since the router was last initialized.

# Internet Sessions

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

<b>DIR-815</b> //	<b>SETUP</b>	<b>ADVANCED</b>	<b>TOOLS</b>	<b>STATUS</b>	<b>SUPPORT</b>				
DEVICE INFO LOGS STATISTICS <b>INTERNET SESSIONS</b> WIRELESS IPv6	<div style="background-color: #f4a460; padding: 5px;"><b>INTERNET SESSIONS</b></div> <p>This page displays Source and Destination packets passing through the device.</p> <input type="button" value="Refresh"/>				<b>Helpful Hints...</b> <ul style="list-style-type: none"> <li>An Active session is a conversation between a program or application on a LAN-side computer and a program or application on a WAN-side computer.</li> </ul>				
<div style="background-color: #333; color: white; padding: 5px;"><b>NAPT SESSIONS</b></div> <p style="text-align: center;"> <b>TCP Sessions : 1</b>  <b>UDP Sessions : 1</b>  <b>Total : 2</b> </p>									
<div style="background-color: #333; color: white; padding: 5px;"><b>NAPT ACTIVE SESSIONS</b></div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">IP Address</th> <th style="width: 30%;">TCP Sessions</th> <th style="width: 30%;">UDP Sessions</th> </tr> </thead> <tbody> <tr> <td>192.168.0.100</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>				IP Address		TCP Sessions	UDP Sessions	192.168.0.100	1
IP Address	TCP Sessions	UDP Sessions							
192.168.0.100	1	1							

# 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 clients.

DIR-815	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT	
DEVICE INFO	<b>CONNECTED WIRELESS CLIENT LIST</b>				<b>Helpful Hints...</b> <ul style="list-style-type: none"> <li>This is a list of all wireless clients that are currently connected to your wireless router.</li> </ul>	
LOGS	View the wireless clients that are connected to the router. (A client might linger in the list for a few minutes after an unexpected disconnect.)					
STATISTICS	<b>NUMBER OF WIRELESS CLIENTS - 2.4GHZ BAND : 0</b>					
INTERNET SESSIONS	<b>SSID</b>	<b>MAC Address</b>	<b>IP Address</b>	<b>Mode</b>		<b>Rate (Mbps)</b>
WIRELESS	<b>NUMBER OF WIRELESS CLIENTS - 5GHZ BAND : 0</b>					
IPv6	<b>SSID</b>	<b>MAC Address</b>	<b>IP Address</b>	<b>Mode</b>		<b>Rate (Mbps)</b>

# IPv6

The IPv6 page displays a summary of the Router's IPv6 settings and lists the IPv6 address and host name of any IPv6 clients.

<b>DIR-815</b> //	<b>SETUP</b>	<b>ADVANCED</b>	<b>TOOLS</b>	<b>STATUS</b>	<b>SUPPORT</b>				
DEVICE INFO LOGS STATISTICS INTERNET SESSIONS WIRELESS IPv6	<p><b>IPv6 NETWORK INFORMATION</b></p> <p>All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.</p> <p><b>IPv6 CONNECTION INFORMATION</b></p> <p><b>IPv6 Connection Type</b> : undefined  <b>Network Status</b> : Disconnected  <b>WAN IPv6 Address</b> : undefined undefined  <b>IPv6 Default Gateway</b> : undefined  <b>LAN IPv6 Address</b> : /  <b>LAN IPv6 Link-Local Address</b> : fe80::226:5aff:fe19:1100 /64  <b>Primary DNS Server</b> : undefined  <b>Secondary DNS Server</b> : undefined</p> <p><b>LAN IPv6 COMPUTERS</b></p> <table border="1"> <thead> <tr> <th>IPv6 Address</th> <th>Name(if any)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>				IPv6 Address	Name(if any)			<p><b>Helpful Hints...</b></p> <ul style="list-style-type: none"> <li>All of your WAN and LAN connection details are displayed here.</li> </ul>
IPv6 Address	Name(if any)								

# Support

The screenshot shows the D-Link DIR-815 web interface. At the top is the D-Link logo. Below it is a navigation bar with tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The SUPPORT tab is active. On the left is a vertical menu with options: MENU, SETUP, ADVANCED, TOOLS, and STATUS. The main content area is titled 'SUPPORT MENU' and contains four sections of help links:

- SUPPORT MENU**
  - [Setup](#)
  - [Advanced](#)
  - [Tools](#)
  - [Status](#)
- SETUP HELP**
  - [Internet](#)
  - [Wireless Settings](#)
  - [Network Settings](#)
- ADVANCED HELP**
  - [Virtual Server](#)
  - [Port Forwarding](#)
  - [Application Rules](#)
  - [QoS Engine](#)
  - [Network Filter](#)
  - [Website Filter](#)
  - [Firewall Settings](#)
  - [Routing](#)
  - [Advanced Wireless](#)
  - [Wi-Fi Protected Setup](#)
  - [Advanced Network](#)
- TOOLS HELP**
  - [Device Administration](#)
  - [Time and Date](#)
  - [Email Settings](#)
  - [System](#)
  - [Firmware](#)
  - [Dynamic DNS](#)
  - [System Check](#)
  - [Schedules](#)
- STATUS HELP**
  - [Device Info](#)
  - [Logs](#)
  - [Statistics](#)
  - [Internet Sessions](#)
  - [Wireless](#)

At the bottom of the interface, the word 'WIRELESS' is displayed in a dark bar.

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-815 offers the following types of security:

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

## What is WPA?

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

The 2 major improvements over WEP:

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

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

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

# Wireless Connection Setup Wizard

To run the Wireless Connection Setup Wizard, click the **Wireless Connection Setup Wizard** button in the **Setup>Wireless Settings** window.

**WIRELESS SETTINGS**

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

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

**WIRELESS NETWORK SETUP WIZARD**

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

[Wireless Connection Setup Wizard](#)

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

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

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

[Add Wireless Device with WPS](#)

**MANUAL WIRELESS NETWORK SETUP**

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

[Manual Wireless Connection Setup](#)

# Wireless Security Setup Wizard

Check the **Manually set 5GHz band Network Name...** box to manually set your desired wireless network name for the 5GHz band.

Type your desired wireless network name (SSID).

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

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

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

**STEP 1: WELCOME TO THE D-LINK WIRELESS SECURITY SETUP WIZARD**

Give your network a name, using up to 32 characters.

Wireless Network Name (SSID) : dlink

**Automatically assign a network key (Recommended)**  
To prevent outsiders from accessing your network, the router will automatically assign a security to your network.

**Manually assign a network key**  
Use this options if you prefer to create our own key.

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

Prev Next Cancel Save

**SETUP COMPLETE!**

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

Wireless Band : 2.4GHz Band

Wireless Network Name (SSID) : dlink

Security Mode : Auto (WPA or WPA2) - Personal

Cipher Type : TKIP and AES

Pre-Shared Key :  
23259f118109eed04c1d464d143201320f45d0d2483e13baac9bf0f314087929

Prev Next Cancel Save

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

Enter the *Wireless Security Password* you would like to use for your wireless network and click **Next** to proceed to the next window.

**STEP 2: SET YOUR WIRELESS SECURITY PASSWORD**

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

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

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

Wireless Security Password :

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

Prev Next Cancel Save

The summary window will display your settings. Write down the security key and enter this on your wireless clients. Click **Save** to save your settings.

**SETUP COMPLETE!**

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

Wireless Band : 2.4GHz Band

Wireless Network Name (SSID) : dlink

Security Mode : Auto (WPA or WPA2) - Personal

Cipher Type : TKIP and AES

Pre-Shared Key : 12345678

Prev Next Cancel Save

# Add Wireless Device with WPS Wizard

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

Select **Auto** to add a wireless client using WPS (Wi-Fi Protected Setup). Once you select **Auto** and click **Connect**, you will have a 120 second time limit to apply the settings to your wireless client(s) and successfully establish a connection.

If you select **Manual**, a settings summary screen will appear. Write down the security key and enter this on your wireless clients.

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

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

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

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

**STEP 1: SELECT CONFIGURATION METHOD FOR YOUR WIRELESS NETWORK**

Please select one of following configuration methods and click next to continue.

**Auto**  Select this option if your wireless device supports WPS (Wi-Fi Protected Setup)

**Manual**  Select this option will display the current wireless settings for you to configure the wireless device manually

**STEP 2: CONNECT YOUR WIRELESS DEVICE**

There are two ways to add wireless device to your wireless network:  
 -PIN (Personal Identification Number)  
 -PBC (Push Button Configuration)

**PIN** :

please enter the PIN from your wireless device and click the below "Connect" Button within 120 seconds

**PBC**

please press the push button on your wireless device and click the below "Connect" Button within 120 seconds

# Configure WEP

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1).
2. Click on **Setup** and then click **Wireless Settings** on the left side.
3. Click the **Manual Wireless Connection Setup** button.
4. Next to *Security Mode*, select **Enable WEP Wireless Security (basic)**.
5. Next to *WEP Encryption*, select **64bit** or **128bit**.
6. Next to *Default WEP Key*, select the WEP key you would like to use as the default WEP key. The available options are **WEP Key 1**, **WEP Key 2**, **WEP Key 3**, or **WEP Key 4**.
7. Enter the WEP key you would like to use in the *WEP Key* field.
8. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.

**WIRELESS SECURITY MODE**

**Security Mode :**

**WEP**

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

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

**Authentication :**

**WEP Encryption :**

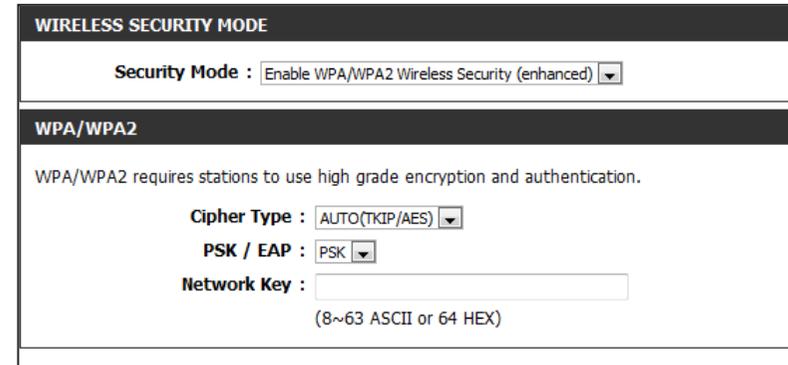
**Default WEP Key :**

**WEP Key :**  (5 ASCII or 10 HEX)

# Configure WPA/WPA2-Personal (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).
2. Click on **Setup** and then click **Wireless Settings** on the left side.
3. Click the **Manual Wireless Connection Setup** button.
4. Next to *Security Mode*, select **Enable WPA/WPA2 Wireless Security (enhanced)**.
5. Next to *Cipher Type*, select **Auto (TKIP/AES)**, **TKIP**, or **AES**.
6. Next to *PSK/EAP*, select **PSK**.
7. Enter the **WPA network key** you would like to use in the *Network Key* field.
8. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the router.



**WIRELESS SECURITY MODE**

**Security Mode :** Enable WPA/WPA2 Wireless Security (enhanced) ▼

**WPA/WPA2**

WPA/WPA2 requires stations to use high grade encryption and authentication.

**Cipher Type :** AUTO(TKIP/AES) ▼

**PSK / EAP :** PSK ▼

**Network Key :**

(8~63 ASCII or 64 HEX)

# Configure WPA/WPA2-Enterprise (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).
2. Click on **Setup** and then click **Wireless Settings** on the left side.
3. Click the **Manual Wireless Connection Setup** button.
4. Next to *Security Mode*, select **Enable WPA/WPA2 Wireless Security (enhanced)**.
5. Next to *Cipher Type*, select **Auto (TKIP/AES)**, **TKIP**, or **AES**.
6. Next to *PSK/EAP*, select **EAP**.
7. Next to *RADIUS Server IP Address* enter the IP Address of your RADIUS server.
8. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
9. Next to *Shared Secret*, enter the security key.
10. Click **Save Settings** to save your settings.

The screenshot shows the 'WIRELESS SECURITY MODE' section of a router's web interface. The 'Security Mode' dropdown is set to 'Enable WPA/WPA2 Wireless Security (enhanced)'. Below this is the 'WPA/WPA2' section, which includes a note: 'WPA/WPA2 requires stations to use high grade encryption and authentication.' The 'Cipher Type' dropdown is set to 'AUTO(TKIP/AES)'. The 'PSK / EAP' dropdown is set to 'EAP'. The 'RADIUS Server IP Address' field is empty. The 'Port' field is empty. The 'Shared Secret' field is empty.

# Connect to a Wireless Network Using Windows® 7

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

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



Wireless Icon

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

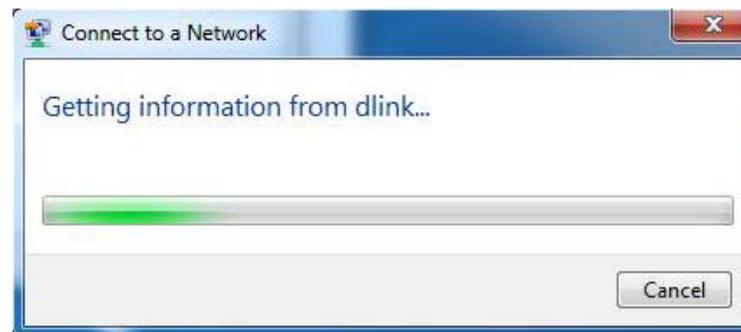


3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

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



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



5. Enter the same security key or passphrase that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

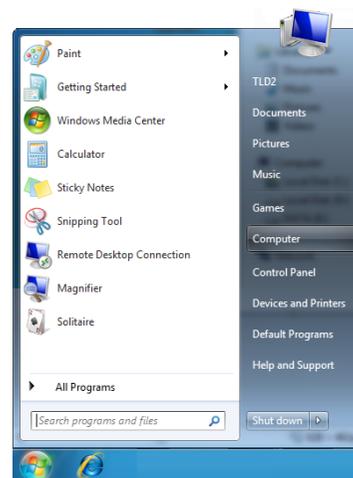
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.



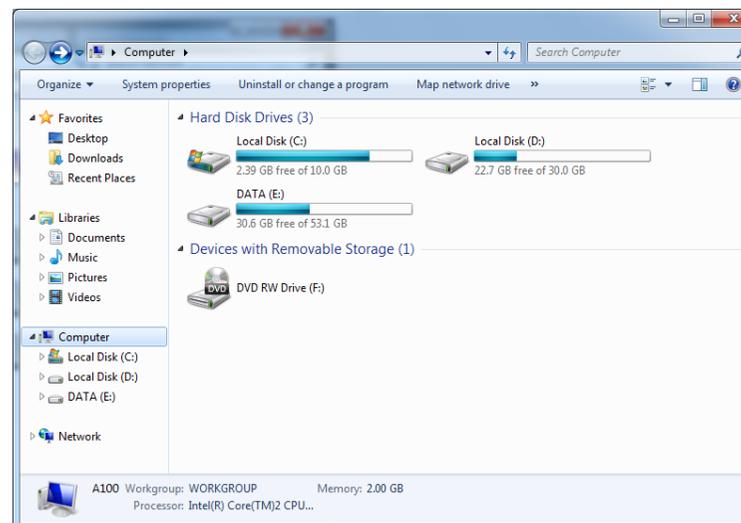
# Configure WPS

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

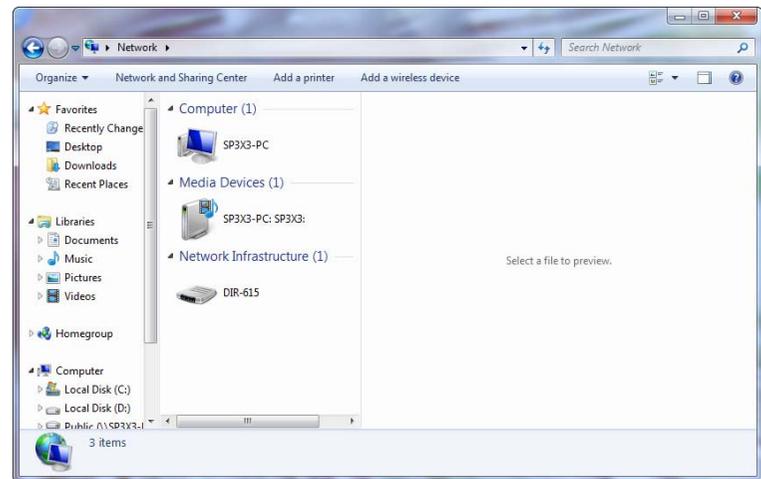
1. Click the **Start** button and select **Computer** from the Start menu.



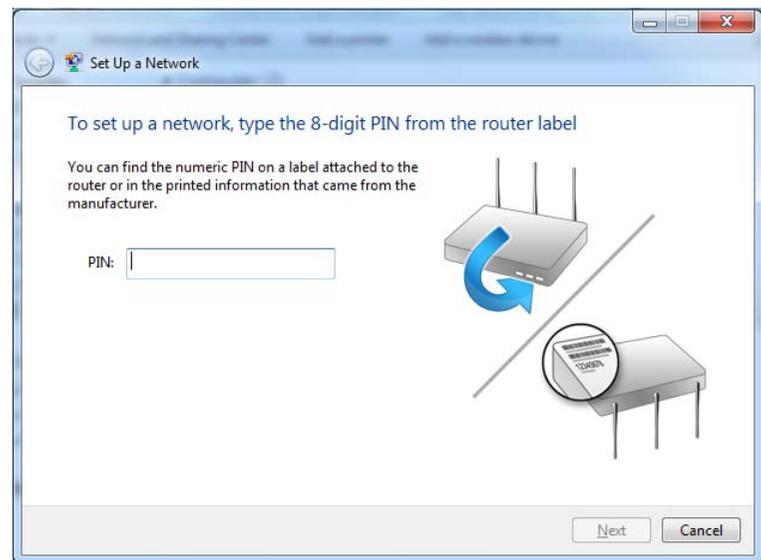
2. Click the **Network** option.



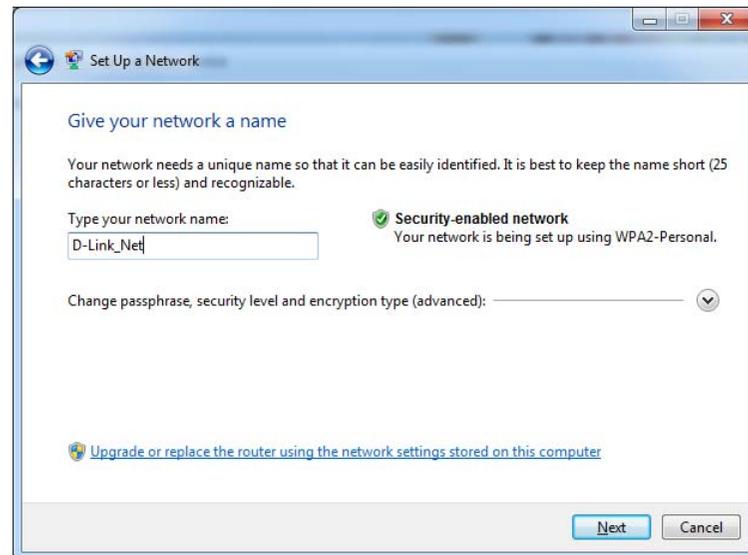
3. Double-click the DAP-1560.



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**.

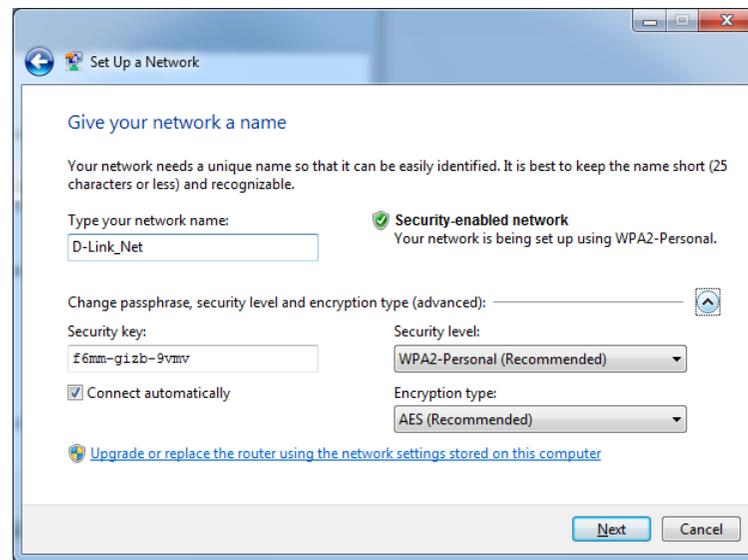


5. Type a name to identify the network.



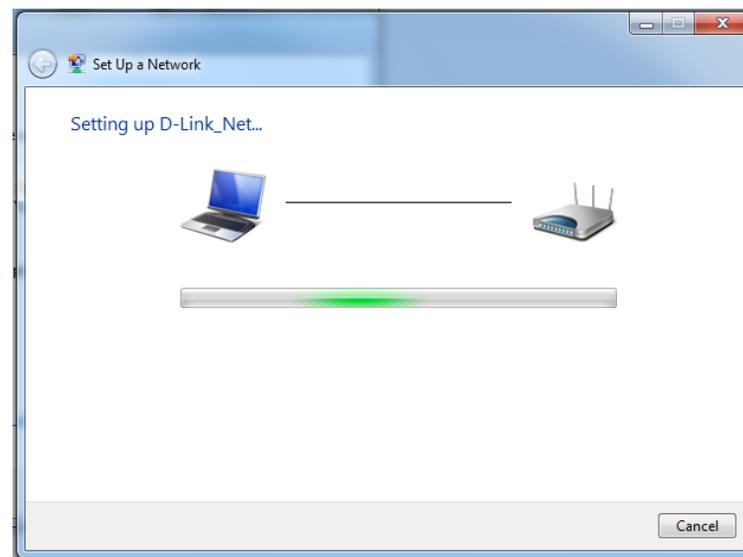
6. To configure advanced settings, click the  icon.

Click **Next** to continue.



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

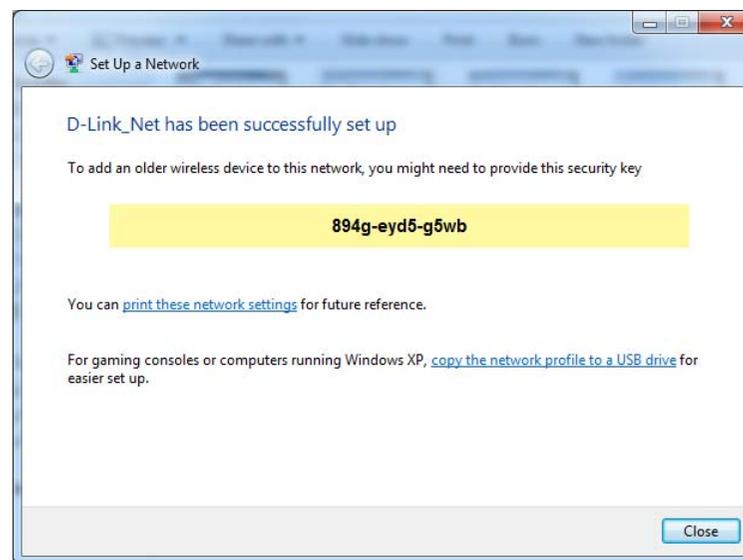
Wait for the configuration to complete.



8. The following window informs you that WPS on the DAP-1560 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.



# Using Windows Vista®

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

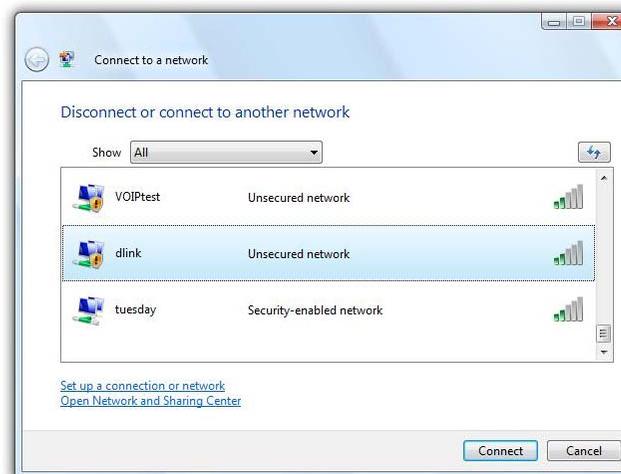
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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

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

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



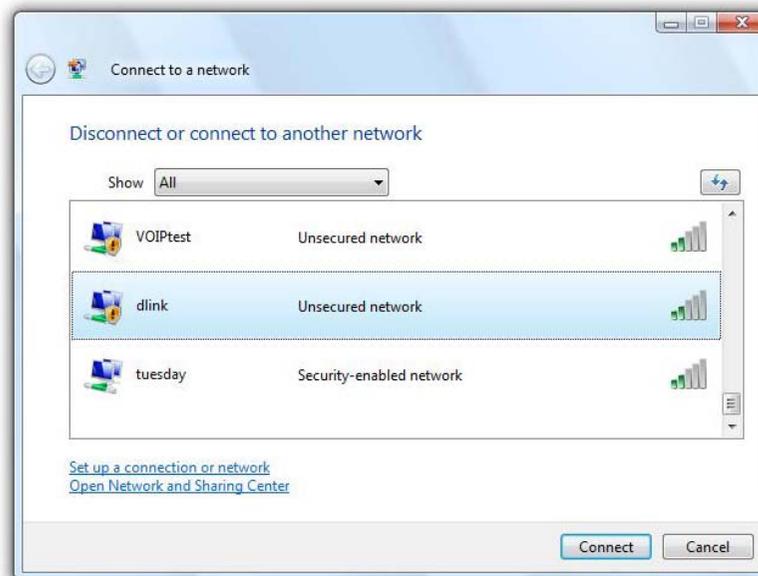
## Configure Wireless Security

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

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

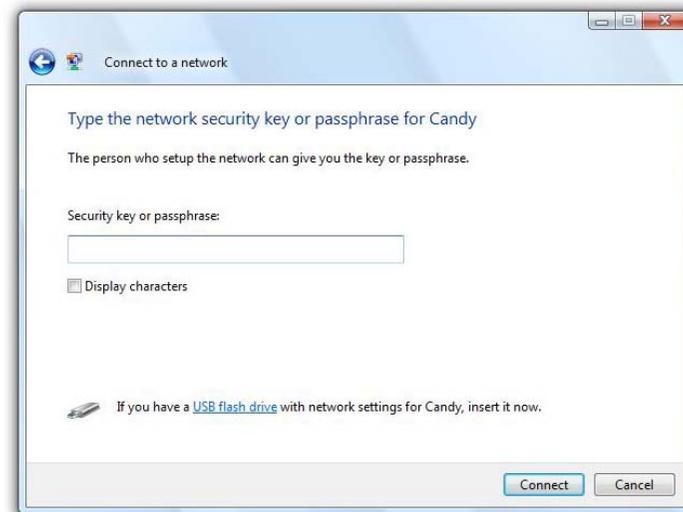


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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

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



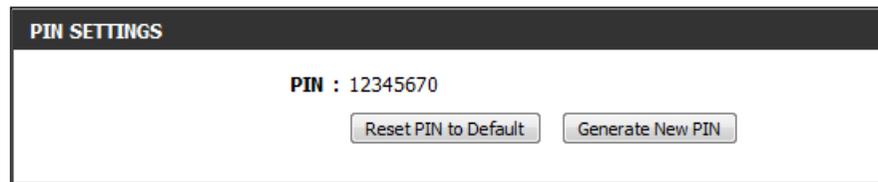
## Connect Using WCN 2.0 in Windows Vista®

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.

For additional information, please refer "Wi-Fi Protected Setup (WPS)" on page 61.



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.

# Using Windows® XP

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

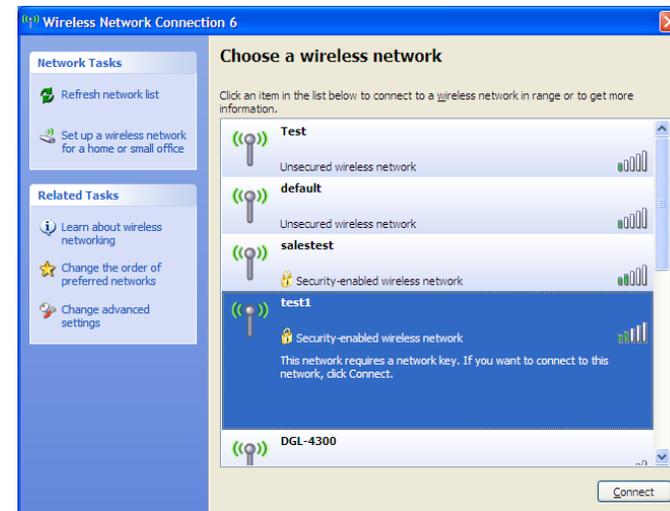
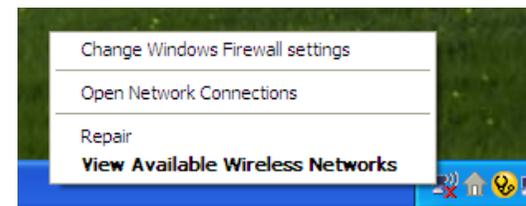
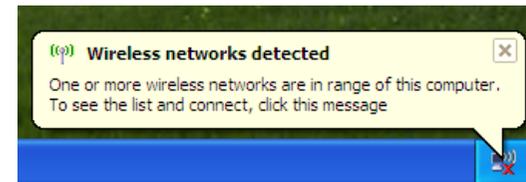
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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

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

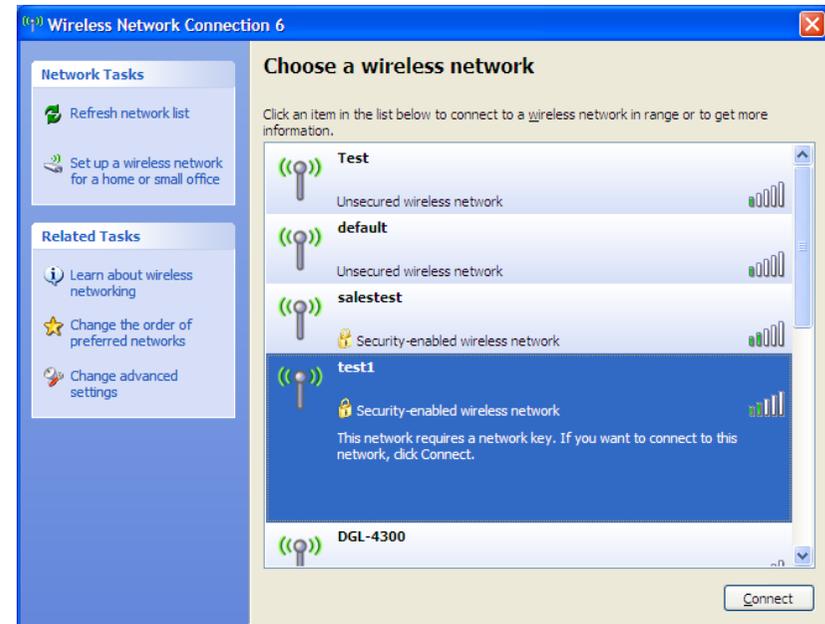
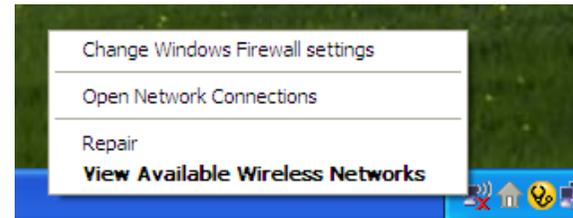
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



## Configure WPA-PSK

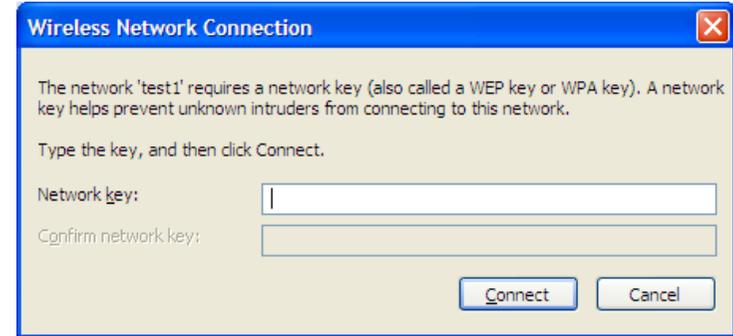
It is recommended to enable WPA on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WPA key being used.

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-815. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.

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

When entering the IP address of the D-Link router (192.168.0.1 for example), you are not connecting to a website nor do you have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Microsoft Internet Explorer® 6.0 and higher
  - Mozilla Firefox 3.0 and higher
  - Google™ Chrome 2.0 and higher
  - Apple Safari 3.0 and higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any Internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

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

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

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

To reset the router, locate the reset button (hole) on the 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.

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

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

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

C:\>
```

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

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

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

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

# Wireless Basics

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

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

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

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

## **What is Wireless?**

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

## **Why D-Link Wireless?**

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

## **How does wireless work?**

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

### **Wireless Local Area Network (WLAN)**

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

### **Wireless Personal Area Network (WPAN)**

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

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

## **Who uses wireless?**

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

### **Home**

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

### **Small Office and Home Office**

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

## **Where is wireless used?**

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

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

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

## **Tips**

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

### **Centralize your router or Access Point**

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

### **Eliminate Interference**

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

### **Security**

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

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DIR-815 wireless network Cardbus adapters.

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

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

# Networking Basics

## Check your IP address

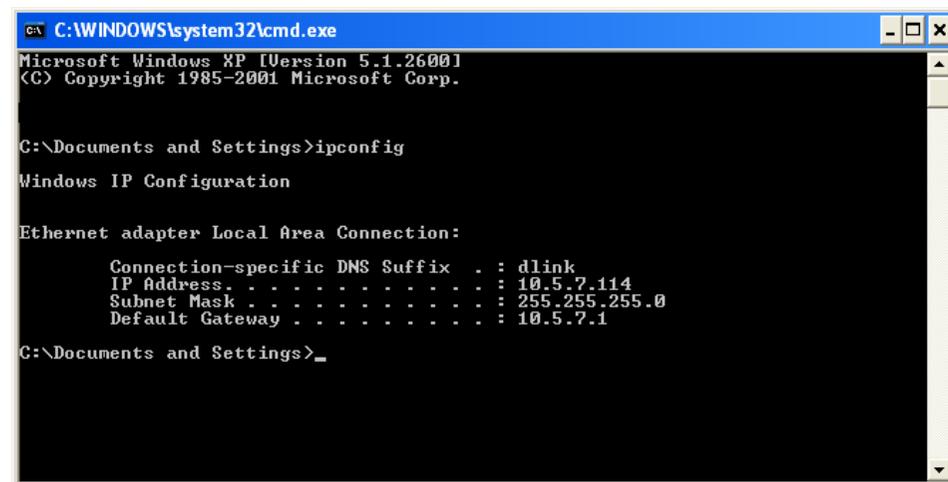
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

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



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>_
```

## 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 > Change Adapter Setting**.

**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

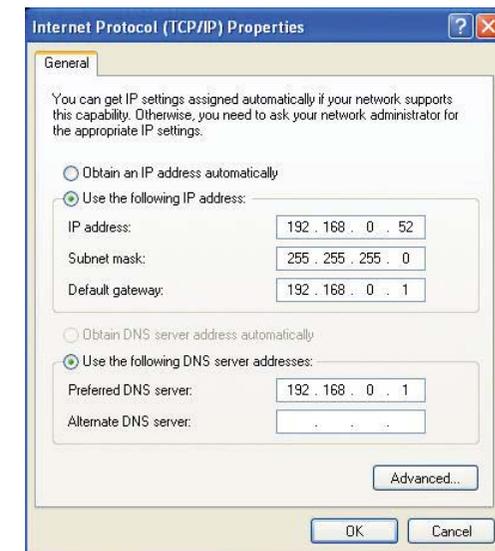
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

**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 Default Gateway the same as the LAN IP address of your router (192.168.0.1).

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

### Step 5

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



# Technical Specifications

## Standards

- IEEE 802.11n (draft 2.0)
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.11a
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab

## Security

- WEP™
- WPA™ - Personal/Enterprise
- WPA2™ - Personal/Enterprise

## Wireless Signal Rates<sup>1</sup>

### IEEE 802.11n Draft 2.0:

#### 20MHz Channel:

- 1Nss: 65/72.2 Mbps (max)
- 2Nss: 130/144.44 Mbps (max)

#### 40MHz Channel:

- 1Nss: 135/150 Mbps (max)
- 2Nss: 270/300 Mbps (max)

### IEEE 802.11a:

- 54 Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 9Mbps
- 6Mbps

### IEEE 802.11b:

- 11 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

### IEEE 802.11g:

- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps

## Wireless Frequency Range<sup>2</sup>

- All countries: 2.412GHz to 2.462GHz (802.11b/g/n)
- USA/ CANADA :5.15GHz to 5.25GHz, 5725 to 5850 (802.11a/n)
- TAIWAN: 5.25GHz to 5.35GHz, 5725 to 5850 (802.11a/n)

## Transmitter Output Power (Peak power)

### For 2.4GHz

802.11b: 21.2 dBm

802.11g: 26.6 dBm

802.11n (20MHz): 26.8 dBm

802.11n (40MHz): 27.5 dBm

### For 5GHz (5.15~ 5.25GHz) (USA/ CANADA only)

802.11a: 14.7dBm

802.11n (20MHz): 14.5dBm

802.11n (40MHz): 16.7dBm

### For 5GHz (5.25~ 5.35GHz) (TAIWAN only)

802.11a: 14.5 dBm

802.11n (20MHz): 14.7 dBm

802.11n (40MHz): 16.7 dBm

### For 5GHz (5.725~5.850GHz)

802.11a: 23.4 dBm

802.11n (20MHz): 27.6 dBm

802.11n (40MHz): 26.2 dBm

<sup>1</sup> Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g, and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

<sup>2</sup> Frequency Range varies depending on country's regulation

<sup>3</sup> The DIR-815 does not include 5.25-5.35GHz & 5.47-5.725GHz in some regions.

# 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-815)
- 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.

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

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

### **Limited Software Warranty:**

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

### **Non-Applicability of Warranty:**

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

### **Submitting A Claim:**

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

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package

to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. DLink 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.

### **What Is Not Covered:**

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link’s judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

### **Disclaimer of Other Warranties:**

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED “AS-IS” WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE

PURCHASER OF THE PRODUCT.

**Limitation of Liability:**

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

**Governing Law:**

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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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.

# Registration

Register your product online at [support.dlink.com/register](http://support.dlink.com/register)



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

Version 1.0  
May 25, 2010

### **Federal Communication Commission Interference 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.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

#### **IMPORTANT NOTE:**

##### **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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note to US model owner: To comply with US FCC regulation, the country selection function has been completely removed from all US models.

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.

### **Industry Canada Statement**

This device complies with RSS-210 of the Industry Canada Rules. 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

This device has been designed to operate with an antenna having a maximum gain of 2.90686 dBi.

Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the EIRP is not more than required for successful communication.

Caution:

- (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 3.33016dBi permitted (for devices in the band 5725-5850 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).

I

**IMPORTANT NOTE:**

**IC Radiation Exposure Statement:**

This equipment complies with IC 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.

### 以下警語適用台灣地區

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

在5.25-5.35 GHz頻帶內操作之無線資訊傳輸設備，限於室內使用。