

USER MANUAL

DIR-615

VERSION 2.2



D-Link®

WIRELESS

Table of Contents

Product Overview	4	Network Settings	32
Package Contents	4	DHCP Server Settings	33
System Requirements	4	DHCP Reservation	34
Features	5	Virtual Server	36
Hardware Overview	6	Port Forwarding	38
Connections	6	Application Rules	39
LEDs	7	Network Filters	40
Installation	8	Access Control	41
Before you Begin	8	Access Control Wizard	41
Wireless Installation Considerations	9	Website Filters	44
Connect to Cable/DSL/Satellite Modem	10	Inbound Filters	45
Connect to Another Router	11	Firewall Settings	46
Getting Started	13	Advanced Wireless Settings	47
Configuration	14	Wi-Fi Protected Setup	48
Web-based Configuration Utility	14	Advanced Network Settings	50
Internet Connection Setup Wizard	15	UPnP	50
Internet Setup	20	Internet Ping Block	50
Manual Configuration	20	Internet Port Speed	50
Dynamic IP Address (DHCP)	21	Multicast Streams	50
PPPoE (DSL)	22	Administrator Settings	51
PPTP	23	Time Settings	52
L2TP	25	SysLog	53
Static IP Address	27	E-mail Settings	54
Big Pond	28	System Settings	55
Wireless Settings	29	Update Firmware	56
Manual Configuration	30	DDNS	57
		System Check	58

Schedules	59	Setting Up a Connection or Network Wirelessly	92
Device Information.....	60	Connecting to a Secured Wireless Network(WEP,	
Log.....	62	WPA-PSK & WPA2-PSK).....	97
Stats.....	63	Connecting to an Unsecured Wireless Network...	101
Internet Sessions	64	Troubleshooting	105
Wireless	66	Wireless Basics	109
Support	67	Wireless Modes	113
Wireless Security.....	68	Networking Basics	114
What is WEP?	68	Check your IP address	114
What is WPA?	69	Statically Assign an IP address	115
Wireless Security Setup Wizard	70	Technical Specifications.....	116
Wireless Wizard - Auto	71		
Wireless Wizard - Manual.....	72		
Configure WEP	74		
Configure WPA-Personal (PSK).....	75		
Configure WPA-Enterprise (RADIUS)	76		
Connect to a Wireless Network.....	78		
Add Wireless Device Wizard	78		
Using Windows® XP.....	81		
Configure WEP	83		
Setting Up Wi-Fi Protection	85		
Initial Router Configuration for Wi-Fi Protection	85		
Setting Up a Configured Router	86		
Changing the Computer Name and Joining a			
Workgroup	87		
Configuring the IP Address in Vista	89		

Package Contents

- D-Link DIR-615 Wireless N Home Router
- 2 Detachable Antennas
- Power Adapter
- CAT5 Ethernet Cable
- CD-ROM with Installation Wizard, User Manual, and Special Offers



Note: Using a power supply with a different voltage rating than the one included with the DIR-615 will cause damage and void the warranty for this product.

System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0, Mozilla 1.7.12 (5.0), or Firefox 1.5 and above (for configuration)
- Installation Wizard requires Windows® XP with Service Pack 2

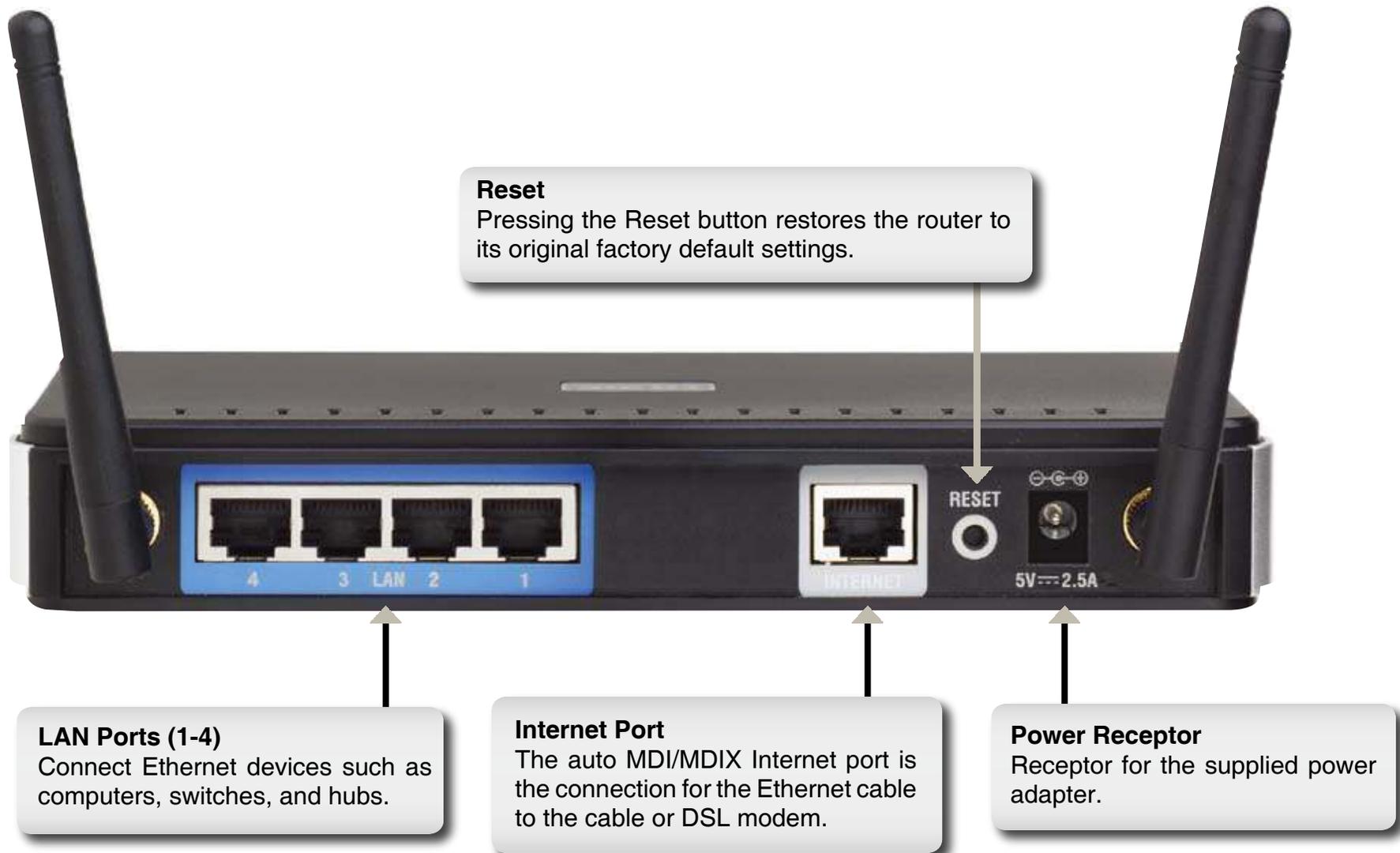
Features

- **Faster Wireless Networking** - The DIR-615 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 802.11b and 802.11g Devices** - The DIR-615 is still fully compatible with the IEEE 802.11b standard, so it can connect with existing 802.11b 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-615 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-615 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-615 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 802.11g and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

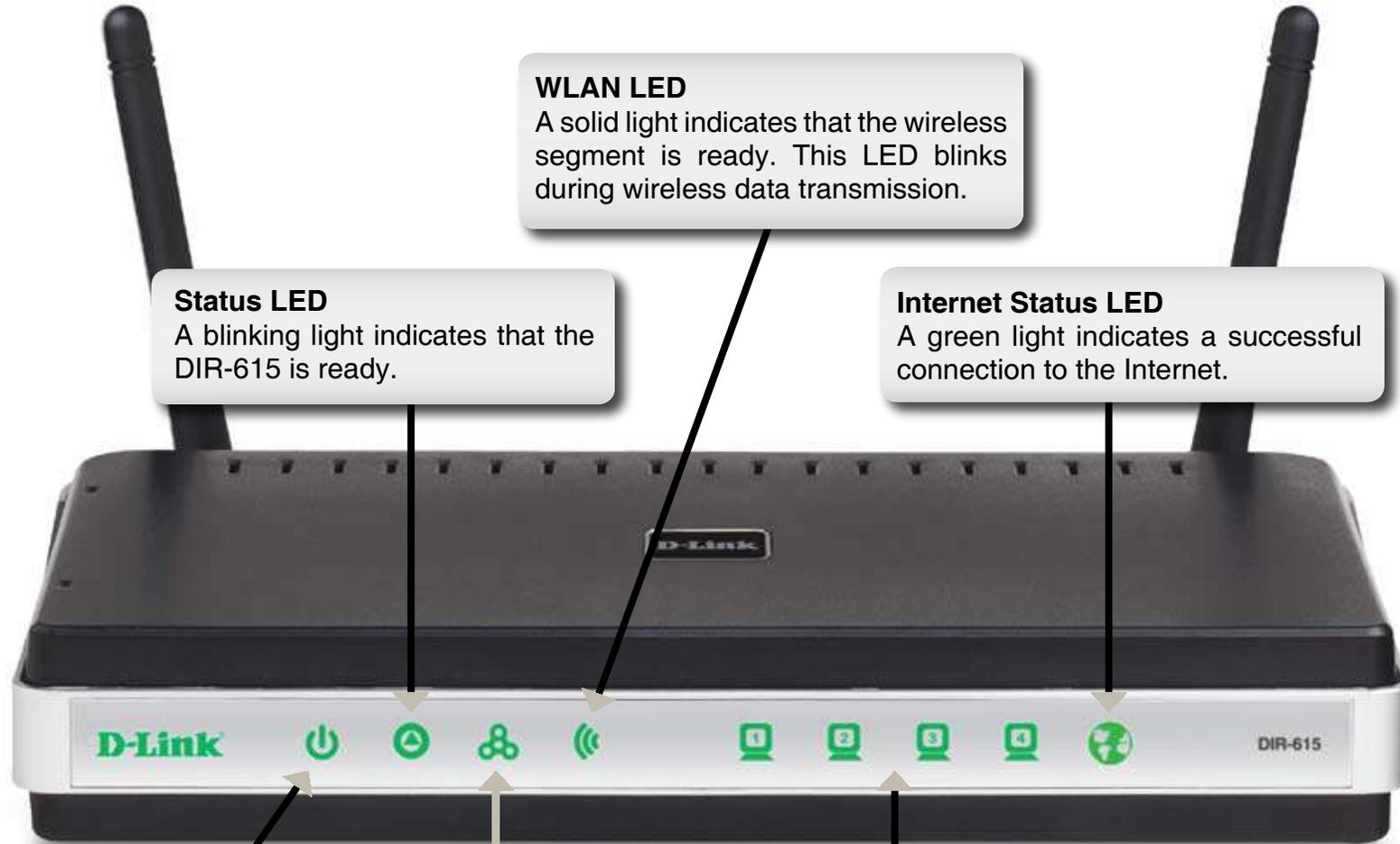
Hardware Overview

Connections



Hardware Overview

LEDs



Status LED
A blinking light indicates that the DIR-615 is ready.

WLAN LED
A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.

Internet Status LED
A green light indicates a successful connection to the Internet.

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

Internet LED
A solid light indicates connection on the Internet port. This LED blinks during data transmission.

Local Network LEDs
A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.

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. Also, you can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Internet port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).

If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

The D-Link wireless router 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. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.
3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Internet port on the router.
4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.
5. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).
6. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 30 seconds for the router to boot.
7. Turn on your computer.
8. Verify the link lights on the router. The power light, Internet light, and the LAN light (the port that your computer is plugged into) should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.
9. Skip to page 14 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. 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 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 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-615 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:\DIR615.exe**” (where **D:** represents the drive letter of your CD-ROM drive).

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



Note: It is recommended to write down 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).



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



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

Internet Connection Setup Wizard

Once logged into the web interface of the router, the **Setup > Internet** page will appear. Click the **Internet Connection Setup Wizard** button to quickly configure your router using the setup wizard.

If you want to enter your settings without running the wizard, click **Manual Internet Configuration Wizard** and skip to page 20.

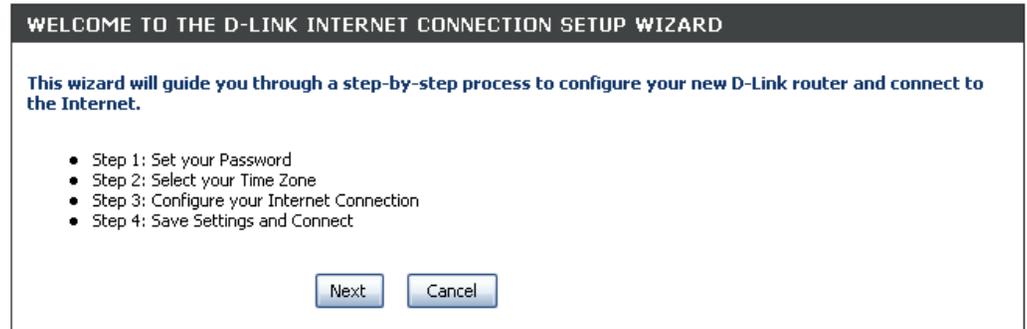
The screenshot displays the D-Link web interface for the DIR-615 router. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar shows menu items for INTERNET, WIRELESS SETTINGS, and NETWORK SETTINGS. The main content area is titled "INTERNET CONNECTION" and contains the following sections:

- INTERNET CONNECTION SETUP WIZARD**: A section with a button labeled "Internet Connection Setup Wizard". Below the button is a note: "Note: Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package."
- MANUAL INTERNET CONNECTION OPTIONS**: A section with a button labeled "Manual Internet Connection Setup".

On the right side of the page, there is a "Helpful Hints..." section with text: "If you are new to networking and have never configured a router before, click on **Internet Connection Setup Wizard** and the router will guide you through a few simple steps to get your network up and running." Below this, it says: "If you consider yourself an advanced user and have configured a router before, click **Manual Internet Connection Setup** to input all the settings manually." A "More..." link is also present.

At the bottom of the page, there is a "WIRELESS" section header.

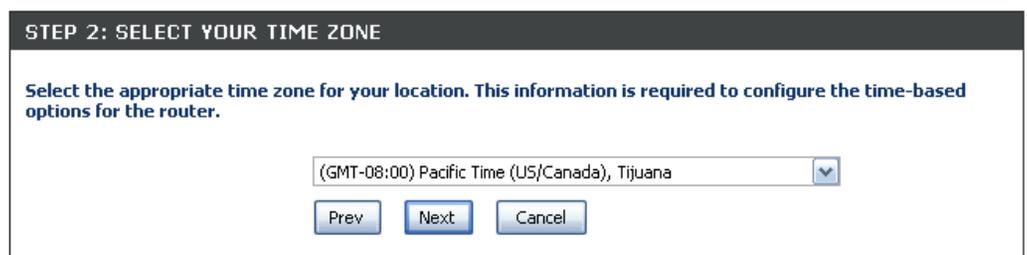
Click **Next** to continue.



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.

STEP 3: CONFIGURE YOUR INTERNET CONNECTION

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

Not Listed or Don't Know ▼

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

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

Prev Next Cancel Connect

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

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

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 : 00:0D:56:3B:22:8B (optional)

Clone Your PC's MAC Address

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. Click **Next** to continue.

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

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

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.

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

SET USERNAME AND PASSWORD CONNECTION (PPTP)

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

Address Mode : Dynamic IP Static IP

PPTP IP Address :

PPTP Subnet Mask :

PPTP Gateway IP Address :

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

User Name :

Password :

Verify Password :

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

SET USERNAME AND PASSWORD CONNECTION (L2TP)

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

Address Mode : Dynamic IP Static IP

L2TP IP Address :

L2TP Subnet Mask :

L2TP Gateway IP Address :

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

User Name :

Password :

Verify Password :

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 :

Click **Connect** to save your settings. Once the router is finished rebooting, click **Continue**. Please allow 1-2 minutes to connect.

SETUP COMPLETE!

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

Internet Setup

Manual Configuration

If you opt to set up your Internet connection manually, you will be redirected to a WAN page that allows you to select your Internet type and enter the correct configuration parameters.

Select your Internet connection type using the “**My Internet Connection is**” drop-down menu.

Click the **Save Settings** button when you have configured the connection.

The screenshot displays the D-Link DIR-615 configuration interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar shows 'INTERNET', 'WIRELESS SETTINGS', and 'NETWORK SETTINGS'. The main content area is titled 'WAN' and 'Internet Connection'. It provides instructions on selecting a connection type (Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond) and includes a note about PPPoE. Below this, there are 'Save Settings' and 'Don't Save Settings' buttons. The 'INTERNET CONNECTION TYPE' section prompts the user to choose a mode, with a dropdown menu currently set to 'Dynamic IP (DHCP)'. The 'DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE' section contains fields for 'Host Name', 'Use Unicast' (checked), 'Primary DNS Server', 'Secondary DNS Server', 'MTU' (1500), and 'MAC Address' (00:00:00:00:00:00), along with a 'Clone Your PC's MAC Address' button. A 'WIRELESS' section is visible at the bottom of the page. On the right side, there is a 'Helpful Hints...' section with additional instructions and a 'More...' link.

Dynamic IP Address (DHCP)

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

Host Name: The Host Name is optional but may be required by some ISPs.

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

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

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

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

The screenshot shows a configuration window titled "DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE :". Below the title is a blue instruction: "Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password." The form contains several fields: "Host Name" with an empty text box; "Use Unicasting" with a checked checkbox and the text "(compatibility for some DHCP Servers)"; "Primary DNS Server" with a text box containing "0.0.0.0"; "Secondary DNS Server" with a text box containing "0.0.0.0"; "MTU" with a text box containing "1500" and the text "(bytes) MTU default = 1500"; and "MAC Address" with a text box containing "00:00:00:00:00:00". At the bottom right of the form is a button labeled "Clone Your PC's MAC Address".

PPPoE (DSL)

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

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

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

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

User Name: Enter your PPPoE user name.

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

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

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

Maximum Idle Time: Enter 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).

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

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

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 On demand Manual

Maximum Idle Time : (minutes, 0=infinite)

Primary DNS Server :

Secondary DNS Server :

MTU : (bytes) MTU default = 1492

MAC Address :

PPTP

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

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

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

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

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

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

Username: Enter your PPTP username.

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

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

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

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

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

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 On demand Manual

Maximum Idle Time : (minutes, 0=infinite)

Primary DNS Server :

Secondary DNS Server :

MTU : (bytes) MTU default = 1400

MAC Address : 00:0d:60:fc:d6:1e

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.

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: Enter the Gateway IP Address provided by your ISP.

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

Username: Enter your L2TP username.

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

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

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

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

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 On demand Manual

Maximum Idle Time : (minutes, 0=infinite)

Primary DNS Server :

Secondary DNS Server :

MTU : (bytes) MTU default = 1400

MAC Address :

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

Clone 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.

Static IP Address

Select Static IP Address 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 configuration window titled "STATIC IP ADDRESS INTERNET CONNECTION TYPE :". Below the title is a blue instruction bar: "Enter the static address information provided by your Internet Service Provider (ISP).". The form contains several input fields: "IP Address" (0.0.0.0), "Subnet Mask" (255.255.255.0), "Default Gateway" (0.0.0.0), "Primary DNS Server" (0.0.0.0), and "Secondary DNS Server" (0.0.0.0). Below these is an "MTU" field with the value "1500" and the text "(bytes) MTU default = 1500". At the bottom is a "MAC Address" field with the value "00:00:00:00:00:00" and a blue button labeled "Clone Your PC's MAC Address".

Big Pond

BigPond Server: Enter the IP address of the login server.

BigPond Username: Enter your BigPond username.

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

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'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.

BIG POND INTERNET CONNECTION TYPE :

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

BigPond Server :

BigPond User Id :

BigPond Password :

Verify Password :

Primary DNS Server :

Secondary DNS Server :

MTU : (bytes) MTU default = 1500

MAC Address :

Wireless Settings

If you want to configure your wireless settings through the setup wizard, click **Wireless Network Setup Wizard** and skip to page 73. If you would like to enter your settings manually continue to the next page. The **Add Wireless Device Wizard** is used to allow a wireless client to connect using WiFi Protected Setup.

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET
WIRELESS SETTINGS
NETWORK SETTINGS

WIRELESS SETTINGS

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

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

ADD WIRELESS DEVICE WIZARD

This wizard is designed to assist you in connecting your wireless device to your 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 Wizard](#)

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 Network 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.

MANUAL WIRELESS NETWORK SETUP

If your wireless network is already set up with WiFi 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 Network Setup](#)

Helpful Hints...

If you already have a wireless network setup with WiFi Protected Setup, click on **Add Wireless Device Wizard** to add new device to your wireless network.

If you are new to wireless networking and have never configured a wireless router before, click on **Wireless Network Setup Wizard** and the router will guide you through a few simple steps to get your wireless network up and running.

If you consider yourself an advanced user and have configured a wireless router before, click **Manual Wireless Network Setup** to input all the settings manually.

Home...

WIRELESS

Manual Configuration

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

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

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DIR-615 to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DIR-615. By default the channel is set to 6. 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 Scan**, this option will be greyed out.

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

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

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'WIRELESS' section is active, showing 'Wireless Network Settings' and 'WIRELESS SECURITY MODE'.

Wireless Network Settings:

- Enable Wireless:
- Wireless Network Name: dlink (Also called the SSID)
- Enable Auto Channel Scan:
- Wireless Channel: 2.437 GHz - CH6
- 802.11 Mode: Mixed 802.11g, 802.11g and 802.11b
- Channel Width: Auto 20/40 MHz
- Transmission Rate: Best (automatic) (Mbit/s)
- Visibility Status: Visible Invisible

WIRELESS SECURITY MODE:

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.

Security Mode: None

Helpful Hints...
 Changing your Wireless Network Name is the first step in securing your wireless network. Change it to a familiar name that does not contain any personal information.
 If you are not utilizing Super G with Dynamic Turbo for its speed improvements, enable Auto Channel Scan so that the router can select the best possible channel for your wireless network to operate on.
 Enabling Hidden Mode is another way to secure your network. With this option enabled, no wireless clients will be able to see your wireless network when they scan to see what's available. For your wireless devices to connect to your router, you will need to manually enter the Wireless Network Name on each device.
 If you have enabled Wireless Security, make sure you write down the WEP Key or Passphrase that you have configured. You will need to enter this information on any wireless device that you connect to your wireless network.
 More...

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

Visibility Status: Select **Invisible** if you do not want the SSID of your wireless network to be broadcast by the DIR-615. If Invisible is selected, the SSID of the DIR-615 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-615 in order to connect to it.

Wireless Security: Refer to page 70 for more information regarding wireless security.

Network Settings

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

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

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

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

Local Domain: 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.

The screenshot displays the D-Link DIR-615 web interface. The top navigation bar includes 'D-Link', 'DIR-615', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'NETWORK SETTINGS' section is active, showing instructions for configuring the internal network and DHCP server. Below this are sections for 'ROUTER SETTINGS' (with fields for Router IP Address, Subnet Mask, Local Domain Name, and Enable DNS Relay), 'DHCP SERVER SETTINGS' (with fields for Enable DHCP Server, DHCP IP Address Range, DHCP Lease Time, and Always broadcast), and 'ADD DHCP RESERVATION' (with fields for Enable, Computer Name, IP Address, and MAC Address). A 'DHCP RESERVATIONS LIST' table is shown at the bottom, and a 'NUMBER OF DYNAMIC DHCP CLIENTS : 1' section displays a table with columns for Computer Name, IP Address, MAC Address, and Expire Time.

Computer Name	IP Address	MAC Address	Expire Time
prescott	192.168.0.156	00:11:09:2a:94:11	23 Hours 18 Minutes

DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-615 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-615. 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 **Server:** your router. Uncheck to disable this function.

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

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

DHCP SERVER SETTINGS

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

Enable DHCP Server :

DHCP IP Address Range : to

DHCP Lease Time : (minutes)

Always broadcast : (compatibility for some DHCP Clients)

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

Always Broadcast: Enable this function to ensure compatibility with some DHCP clients.

DHCP Reservation

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

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

Enable: Check this box to enable the reservation.

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

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

MAC Address: Enter the MAC address of the computer or device.

Copy Your PC's MAC Address: If you want to assign an IP address to the computer you are currently on, click this button to populate the fields.

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

Number of Dynamic DHCP Clients: In this section you can see what LAN devices are currently leasing IP addresses.

Revoke: Click **Revoke** to cancel the lease for a specific LAN device and free an entry in the lease table. Do this only if the device no longer needs the leased IP address, because, for example, it has been removed from the network.

ADD DHCP RESERVATION

Enable :

Computer Name : << Computer Name ▼

IP Address :

MAC Address :

DHCP RESERVATIONS LIST

Enable	Computer Name	MAC Address	IP Address		

NUMBER OF DYNAMIC DHCP CLIENTS : 1

Computer Name	IP Address	MAC Address	Expire Time		
prescott	192.168.0.156	00:11:09:2a:94:11	23 Hours 18 Minutes	Revoke	Reserve

Note: The Revoke option will not disconnect a PC with a current network session from the network; you would need to use MAC Address Filter to do that. Revoke will only free up a DHCP Address for the very next requester. If the previous owner is still available, those two devices may both receive an IP Address Conflict error, or the second device may still not receive an IP Address; in that case, you may still need to extend the “DHCP IP Address Range” to address the issue, it is located in the DHCP Server section.

Reserve: The Reserve option converts this dynamic IP allocation into a DHCP Reservation and adds the corresponding entry to the DHCP Reservations List.

Virtual Server

The DIR-615 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-615 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DIR-615 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-615 redirects the external service request to the appropriate server within the LAN network.

The DIR-615 is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

Each virtual service that is created will be listed at the bottom of the screen in the Virtual Servers List. There are pre-defined virtual services already in the table. You may use them by enabling them and assigning the server IP to use that particular virtual service.

The screenshot displays the D-Link DIR-615 web interface for configuring Virtual Servers. The 'VIRTUAL SERVER' section includes a description and 'Save Settings' and 'Don't Save Settings' buttons. Below is the 'VIRTUAL SERVERS LIST' table:

Name	Application Name	Port	Traffic Type	Schedule	Inbound Filter
<input type="checkbox"/>	Application Name	Public 0	Both	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Computer Name	Private 0	Protocol	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Application Name	Public 0	Both	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Computer Name	Private 0	Protocol	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Application Name	Public 0	Both	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Computer Name	Private 0	Protocol	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Application Name	Public 0	Both	Schedule Always	Inbound Filter Allow All
<input type="checkbox"/>	Computer Name	Private 0	Protocol	Schedule Always	Inbound Filter Allow All

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

For a list of ports for common applications, please visit http://support.dlink.com/faq/view.asp?prod_id=1191.

This will allow you to open a single port. If you would like to open a range of ports, refer to page 38.

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

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

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

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

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

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

24 -- VIRTUAL SERVERS LIST					
			Port	Traffic Type	
<input type="checkbox"/>	Name []	<< Application Name [v]	Public 0	Both [v]	Schedule Always [v]
	IP Address 0.0.0.0	<< Computer Name [v]	Private 0	Protocol 0	Inbound Filter Allow All [v]
<input type="checkbox"/>	Name []	<< Application Name [v]	Public 0	Both [v]	Schedule Always [v]
	IP Address 0.0.0.0	<< Computer Name [v]	Private 0	Protocol 0	Inbound Filter Allow All [v]
<input type="checkbox"/>	Name []	<< Application Name [v]	Public 0	Both [v]	Schedule Always [v]
	IP Address 0.0.0.0	<< Computer Name [v]	Private 0	Protocol 0	Inbound Filter Allow All [v]
<input type="checkbox"/>	Name []	<< Application Name [v]	Public 0	Both [v]	Schedule Always [v]
	IP Address 0.0.0.0	<< Computer Name [v]	Private 0	Protocol 0	Inbound Filter Allow All [v]

Port Forwarding

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

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

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

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

Example: 24,1009,3000-4000

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

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

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 various formats including, Port Ranges (100-150), Individual Ports (80, 8080), or Mixed (1020-5000, 609).

Save Settings Don't Save Settings

24 -- PORT FORWARDING RULES

Name	IP Address	Application Name	Computer Name	Ports to Open	Schedule	Inbound Filter
	0.0.0.0			TCP	Always	Allow All
	0.0.0.0			UDP	Always	Allow All
	0.0.0.0			TCP	Always	Allow All
	0.0.0.0			UDP	Always	Allow All
	0.0.0.0			TCP	Always	Allow All
	0.0.0.0			UDP	Always	Allow All
	0.0.0.0			TCP	Always	Allow All
	0.0.0.0			UDP	Always	Allow All

Helpful Hints...

Check the **Application Name** drop down menu for a list of predefined applications. If you select one of the predefined applications, 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 LAN computer to which you would like to open the specified port.

Select a schedule for when the rule will be enabled. If you do not see the schedule you need in the list of schedules, go to the **Tools > Schedules** screen and create a new schedule.

You can enter ports in various formats:

Range (50-100)
Individual (80, 8080, 8088)
Mixed (1020-5000, 609)

More...

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-615. If you need to run applications that require multiple connections, specify the port normally associated with an application in the “Trigger Port” field, select the protocol type as TCP or UDP, then enter the firewall (public) ports associated with the trigger port to open them for inbound traffic.

The DIR-615 provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

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

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

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

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

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

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

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'D-Link', 'DIR-615', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'ADVANCED' tab is selected, and the 'APPLICATION RULES' section is active. Below the navigation, there is a description of the feature and 'Save Settings' and 'Don't Save Settings' buttons. The main content area is titled '24 -- APPLICATION RULES' and contains a table with the following columns: Name, Application, Trigger, Traffic Type, and Schedule. There are five rows of application rules, each with a checkbox on the left. The Application column has a dropdown menu with '<<' and 'Application Name'. The Trigger column has a text input field. The Traffic Type column has a dropdown menu with 'TCP'. The Schedule column has a dropdown menu with 'Always'. On the right side of the interface, there is a 'Helpful Hints...' section with text explaining the feature and a 'More...' link.

Network Filters

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

Configure MAC Filtering: Select Turn MAC Filtering Off, allow MAC addresses listed below, or deny MAC addresses listed below from the drop-down menu.

MAC Address: Enter the MAC address you would like to filter.
To find the MAC address on a computer, please refer to the Networking Basics section in this manual.

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

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

MAC ADDRESS FILTER

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

Save Settings Don't Save Settings

24 -- MAC FILTERING RULES

Configure MAC Filtering below:
Turn MAC Filtering OFF

MAC Address	DHCP Client List	
	Computer Name	Clear

Helpful Hints...
Create a list of MAC addresses that you would either like to allow or deny 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, then click the arrow to add that device's MAC address to the list.
Click the Clear button to remove the MAC address from the MAC Filtering list.
More...

Access Control

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

Add Policy: Check the **Enable Access Control** check box and click the **Add Policy** button to start the **Access Control Wizard**.



Access Control Wizard

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

STEP 1: CHOOSE POLICY NAME

Choose a unique name for your policy.

Policy Name :

Access Control Wizard (continued)

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

STEP 1: CHOOSE POLICY NAME

Choose a unique name for your policy.

Policy Name :

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

STEP 2: SELECT SCHEDULE

Choose a schedule to apply to this policy.

Details :

Enter the following information and then click **Next** to continue.

- Address Type - Select IP address, MAC address, or Other Machines.
- IP Address - Enter the IP address of the computer you want to apply the rule to.

STEP 3: SELECT MACHINE

Select the machine to which this policy applies.

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

Address Type : IP MAC Other Machines

IP Address : <<

Machine Address : <<

Machine		
192.168.0.100		

Access Control Wizard (continued)

Select the filtering method and then click **Next** to continue.

STEP 4: SELECT FILTERING METHOD

Select the method for filtering.

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

Apply Web Filter :

Apply Advanced Port Filters :

Enter the rule:

Enable - Check to enable the rule.

Name - Enter a name for your rule.

Dest IP Start - Enter the starting IP address.

Dest IP End - Enter the ending IP address.

Protocol - Select the protocol.

Dest Port Start - Enter the starting port number.

Dest Port End - Enter the ending port number.

STEP 5: PORT FILTER

Add Port Filters Rules.

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

Enable	Name	Dest IP Start	Dest IP End	Protocol	Dest Port Start	Dest Port End
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="255.255.255.255"/>	<input type="text" value="Any"/>	<input type="text" value="0"/>	<input type="text" value="65535"/>

To enable web logging, click Enable.

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

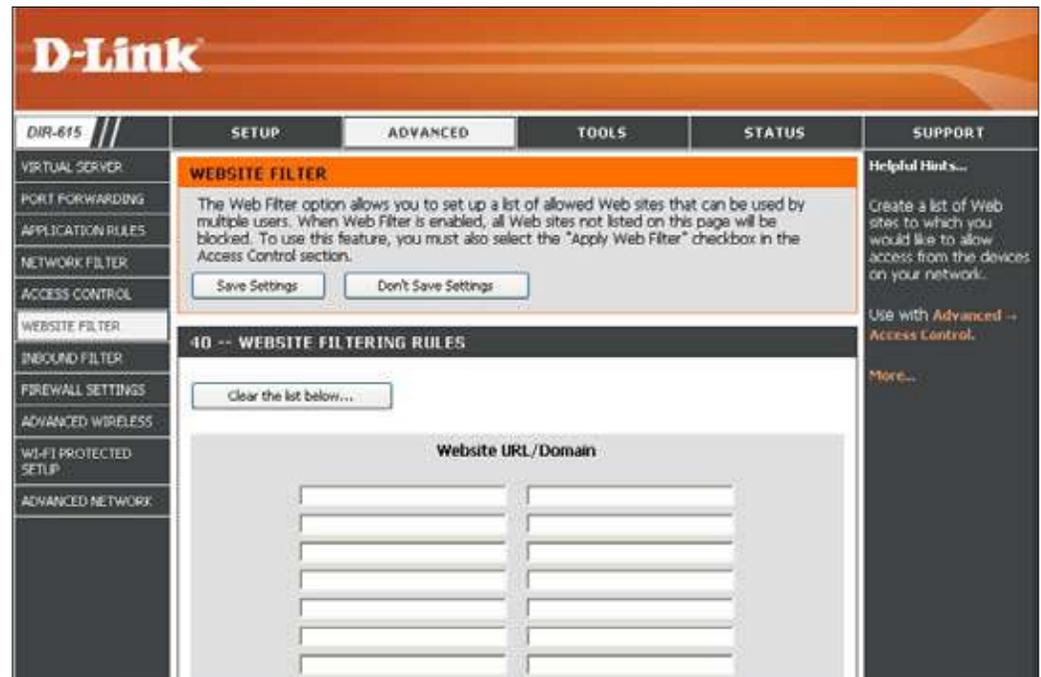
STEP 6: CONFIGURE WEB ACCESS LOGGING

Web Access Logging : Disabled Enabled

Website Filters

Website Filters are used to deny or allow LAN computers from accessing specific web sites by the URL or domain. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL the blocked words applied, the site will not be accessible and the web page will not displayed. When applying for allowed list, only keywords entered will be allowed and anything else will be blocked. To use this feature, enter the text and click **Save Settings**. To delete the text, click **Clear the List Below**.

Website URL/ Domain: Enter the URLs that you want to deny or allow LAN computers from accessing.



Inbound Filters

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

Name: Enter a name for the inbound filter rule.

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

Enable: Check to enable rule.

Source IP Start: Enter the starting IP address. Enter 0.0.0.0 if you do not want to specify an IP range.

Source IP End: Enter the ending IP address. Enter 255.255.255.255 if you do not want to specify and IP range.

Save: Click the **Save** button to apply your settings. You must click Save Settings at the top to save the settings.

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

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

INBOUND FILTER

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

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

ADD INBOUND FILTER RULE

Name :

Action : **Deny**

Source IP Range	Enable	Source IP Start	Source IP End
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255
<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	255.255.255.255

INBOUND FILTER RULES LIST

Name	Action	Source IP Range

Helpful hints...

Give each rule a Name that is meaningful to you.

Each rule can either **Allow** or **Deny** access from the WAN.

Up to eight ranges of WAN IP addresses can be controlled by each rule. The checkbox by each IP range can be used to disable ranges already defined.

The starting and ending IP addresses are WAN-side address.

Click the **Add** or **Update** button to store a finished rule in the Rules List below.

Click the **Edit** icon in the Rules List to change a rule.

Click the **Delete** icon in the Rules List to permanently remove a rule.

[More...](#)

WIRELESS

Firewall Settings

A firewall protects your network from the outside world. The D-Link DIR-615 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

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

NAT Endpoint Filtering: Select one of the following for TCP and UDP ports:
Endpoint Independent - Any incoming traffic sent to an open port will be forwarded to the application that opened the port. The port will close if idle for 5 minutes.

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

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

Enable Anti-Spoof Checking: Enable this option to provide protection from certain kinds of “spoofing” attacks.

Enable 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.

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.

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



Advanced Wireless Settings

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 2342. 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) 3 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

802.11d: This enables 802.11d operation.

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

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

Short GI: 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.

The screenshot shows the D-Link DIR-615 Advanced Wireless Settings page. The page is divided into several sections:

- ADVANCED WIRELESS:** A warning message states: "If you are not familiar with these Advanced Wireless settings, please read the help section before attempting to modify these settings." Below this are "Save Settings" and "Don't Save Settings" buttons.
- ADVANCED WIRELESS SETTINGS:** A list of configuration options:
 - Transmit Power: High (dropdown menu)
 - Beacon Period: 100 (input field) (20..1000)
 - RTS Threshold: 2346 (input field) (0..2347)
 - Fragmentation Threshold: 2346 (input field) (256..2346)
 - DTIM Interval: 1 (input field) (1..255)
 - 802.11d Enable:
 - WMM Enable:
 - Aggregation Limit: 84bytes (dropdown menu)
 - TPC Max Gain: 20 (input field) (0..50)
 - Aggregation Max Size: 64000 (input field) (2000..65535)
 - Aggregation Num Packets: 32 (input field) (1..64)
 - Force Short Slot for 11N Clients:
 - Short GI:
 - Extra Wireless Protection:
- WIRELESS:** A section at the bottom of the page.

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

It is recommended that you leave these parameters at their default values. Adjusting them could limit the performance of your wireless network.

Use 802.11d only for countries where it is required.

Enabling WMM can help control latency and jitter when transmitting multimedia content over a wireless connection.

[More...](#)

Wi-Fi Protected Setup

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.

Lock Wireless Security Settings: Locking the wireless security settings prevents the settings from being changed by the Wi-Fi Protected Setup feature of the router. Devices can still be added to the network using Wi-Fi Protected Setup. However, the settings of the network will not change once this option is checked.

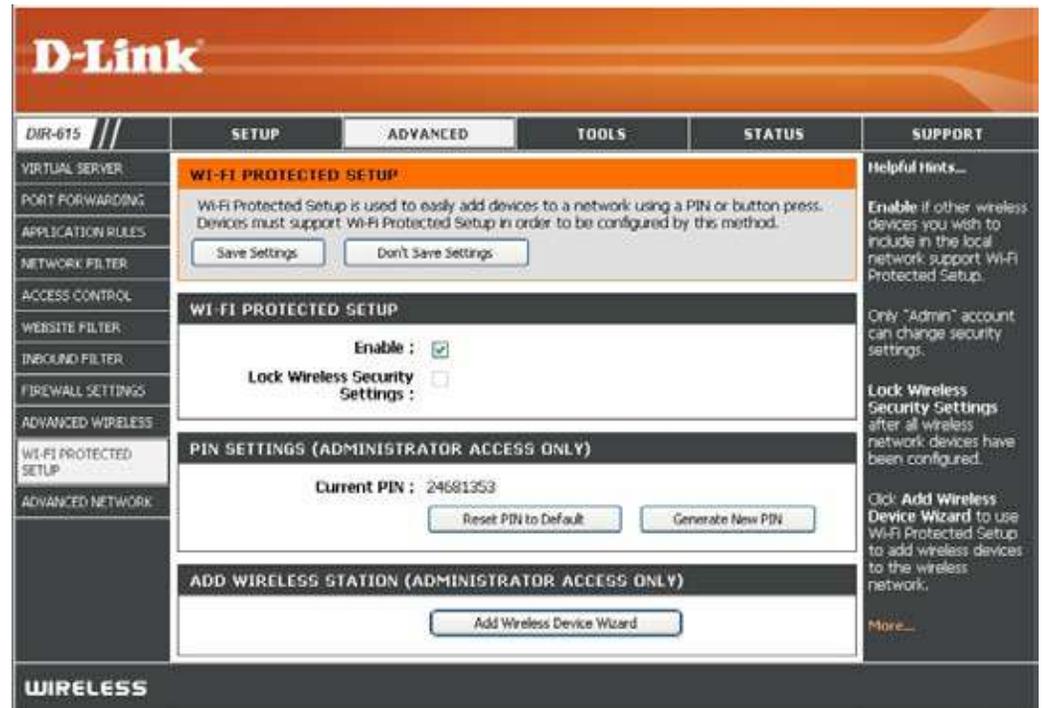
PIN Settings: A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator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

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

Reset PIN to

Default: Restore the default PIN of the router.

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



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

Station:

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.

Add Wireless

Device Wizard: Click to add a wireless client to your network. Please refer to page 79 for more informa

Advanced Network Settings

UPnP Settings: 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-615 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 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.

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

The screenshot displays the D-Link DIR-615 Advanced Network Settings interface. The main content area is divided into several sections:

- ADVANCED NETWORK:** A warning message states, "If you are not familiar with these Advanced Network settings, please read the help section before attempting to modify these settings." Below this are "Save Settings" and "Don't Save Settings" buttons.
- UPNP:** The "Enable UPnP" checkbox is checked.
- WAN PING:** The "Enable WAN Ping Respond" checkbox is unchecked. The "WAN Ping Inbound Filter" is set to "Allow All".
- WAN PORT SPEED:** The "WAN Port Speed" dropdown menu is set to "Auto 10/100Mbps".
- MULTICAST STREAMS:** The "Enable Multicast Streams" checkbox is checked.

The sidebar on the right contains "Helpful Hints..." and "More..." links. The hints include:

- UPnP helps other UPnP LAN hosts interoperate with the router. Leave the UPnP option enabled as long as the LAN has other UPnP applications.
- For added security, it is recommended that you disable the WAN Ping Respond option. Ping is often used by malicious Internet users to locate active networks or PCs.
- The WAN speed is usually detected automatically. If you are having problems connecting to the WAN, try selecting the speed manually.
- If you are having trouble receiving multicast streams from the Internet, make sure the Multicast Streams option is enabled.

Administrator Settings

This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes. Only the admin account has the ability to change both admin and user account passwords.

Admin Password: Enter a new password for the Administrator Login Name. The administrator can make changes to the settings.

User Password: Enter the new password for the User login. If you login as the User, you can only see the settings, but cannot change them.

Gateway Name: Enter a name for the DIR-615 router.

Remote Management: Remote management allows the DIR-615 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: The port number used to access the DIR-615. Example: `http://x.x.x.x:8080` whereas x.x.x.x is the Internet IP address of the DIR-615 and 8080 is the port used for the Web Management interface.

Inbound Filter:

This section will list any rules that are created. You may click the **Edit** icon to change the settings or enable/disable the rule, or click the

The screenshot shows the D-Link DIR-615 web management interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The main content area is titled "ADMINISTRATOR SETTINGS" and contains the following sections:

- ADMINISTRATOR SETTINGS:** A text box explaining that the 'admin' and 'user' accounts can access the management interface. The admin has read/write access and can change passwords, while the user has read-only access. Below this is a note: "By default there is no password configured. It is highly recommended that you create a password to keep your router secure." Two buttons, "Save Settings" and "Don't Save Settings", are located at the bottom of this section.
- ADMIN PASSWORD:** A section titled "Please enter the same password into both boxes, for confirmation." It contains two input fields labeled "Password:" and "Verify Password:".
- USER PASSWORD:** A section titled "Please enter the same password into both boxes, for confirmation." It contains two input fields labeled "Password:" and "Verify Password:".
- SYSTEM NAME:** A section with a label "Gateway Name:" and a text input field containing "D-Link DIR-615".
- ADMINISTRATION:** A section with the following options:
 - "Enable Remote Management:" with an unchecked checkbox.
 - "Remote Admin Port:" with a text input field containing "8080".
 - "Remote Admin Inbound Filter:" with a dropdown menu set to "Allow All" and a text input field containing "Details : Everyone allowed".

On the right side of the interface, there is a "Helpful Hints..." section with the following text: "For security reasons, it is recommended that you change the password for the Admin and User accounts. Be sure to write down the new and passwords to avoid having to reset the router in case they are forgotten." Below this, it says: "Enabling Remote Management, allows you or others to change the router configuration from a computer on the Internet." and "Choose a port to open for remote management...". At the bottom right, it says: "Select a filter that controls access as needed for this admin port. If you do not see the filter you need in the list of filters, go to the Advanced -> Inbound Filter screen and create a new filter." and "More...".

Time Settings

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

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

Daylight Saving: To select Daylight Saving time manually, select enabled or disabled, and enter a start date and an end date for daylight saving time.

Enable NTP Server: NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. Check this box to use a NTP server. This will only connect to a server on the Internet, not a local server.

NTP Server Used: Enter the NTP server or select one from the drop-down menu.

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Set Time**. You can also click **Copy Your Computer's Time Settings**.

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'D-Link', 'DIR-615', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'TIME' and contains the following sections:

- Time Configuration:** A descriptive paragraph and two buttons: 'Save Settings' and 'Don't Save Settings'.
- TIME CONFIGURATION:**
 - Current Router Time: Saturday, January 31, 2004 2:50:54 PM
 - Time Zone: (GMT-08:00) Pacific Time (US/Canada), Tijuana
 - Enable Daylight Saving:
 - Daylight Saving Offset: +1:00
 - Daylight Saving Dates:

	Month	Week	Day of Week	Time
DST Start	Apr	1st	Sun	2 am
DST End	Oct	5th	Sun	2 am
- AUTOMATIC TIME CONFIGURATION:**
 - Enable NTP Server:
 - NTP Server Used: [] << Select NTP Server
- SET THE DATE AND TIME MANUALLY:**
 - Date And Time:

Year	2004	Month	Jan	Day	31
Hour	2	Minute	50	Second	45
					PM
 - Copy Your Computer's Time Settings

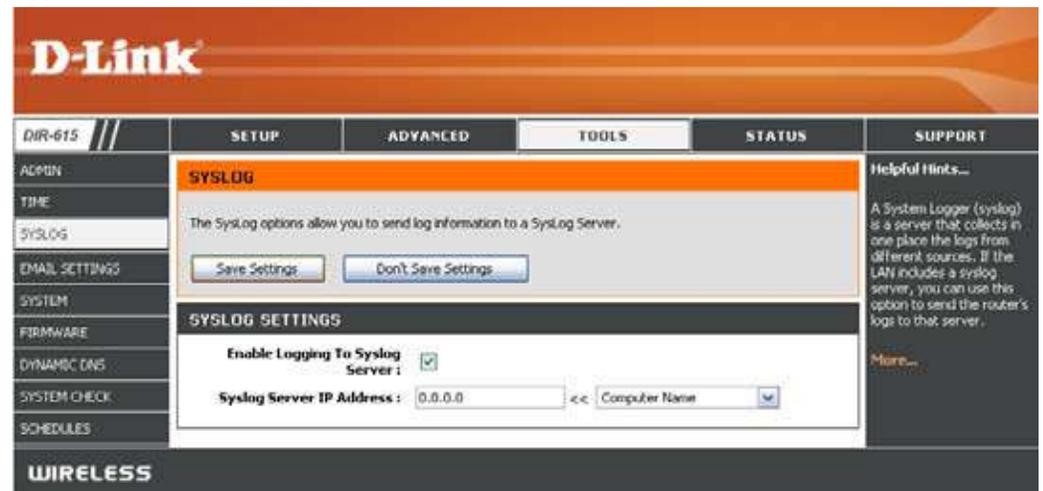
The bottom of the page features the 'WIRELESS' logo.

SysLog

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

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

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



E-mail Settings

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

Enable Email Notification: When this option is enabled, router activity logs are e-mailed to a designated e-mail address.

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

To Email Address: Enter the e-mail address where you want the e-mail sent.

SMTP Server Address: Enter the SMTP server address for sending e-mail. If your SMTP server requires authentication, select this option.

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

Account Name: Enter your account for sending e-mail.

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

On Log Full: When this option is selected, logs will be sent via e-mail when the log is full.

On Schedule: Selecting this option will send the logs via e-mail according to schedule.

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

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists 'ADMIN', 'TIME', 'SYSLOG', 'EMAIL SETTINGS', 'SYSTEM', 'FIRMWARE', 'DYNAMIC DNS', 'SYSTEM CHECK', and 'SCHEDULES'. The main content area is titled 'EMAIL SETTINGS' and contains the following sections:

- Email Settings:** A text box explaining the feature and two buttons: 'Save Settings' and 'Don't Save Settings'.
- ENABLE:** A section with a checked checkbox for 'Enable Email Notification'.
- EMAIL SETTINGS:** A form with the following fields:
 - From Email Address: [text input]
 - To Email Address: [text input]
 - SMTP Server Address: [text input]
 - Enable Authentication:
 - Account Name: [text input]
 - Password: [text input]
 - Verify Password: [text input]
- EMAIL LOG WHEN FULL OR ON SCHEDULE:** A section with:
 - On Log Full:
 - On Schedule:
 - Schedule: [dropdown menu showing 'Never']
 - Details: [text input]

The right sidebar contains 'Helpful Hints...' and 'More...' links.

System Settings

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

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

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

Reboot Device: Click to reboot the router.

D-Link

DIR-615 // SETUP ADVANCED **TOOLS** STATUS SUPPORT

ADMIN

SYSTEM SETTINGS

The System Settings section allows you to reboot the device, or 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 have created.

The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file created by device can be uploaded into the unit.

SYSTEM SETTINGS

Save To Local Hard Drive:

Load From Local Hard Drive:

Restore To Factory Default:
 Restore all settings to the factory defaults.

Reboot The Device:

WIRELESS

Helpful Hints...

Once your router is configured the way you want it, you can save the configuration settings to a configuration file.

You might need this file so that you can load your configuration later in the event that the router's default settings are restored.

To save the configuration, click the **Save Configuration** button.

[More...](#)

Update Firmware

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

Firmware Upgrade: Click on **Check Online Now for Latest Firmware Version** to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

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

Notifications Options: Check **Automatically Check Online for Latest Firmware Version** to have the router check automatically to see if there is a new firmware upgrade.

Check **Email Notification of Newer Firmware Version** to have the router send an e-mail when there is a new firmware available.

The screenshot displays the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'FIRMWARE' and contains the following sections:

- FIRMWARE:** A introductory text block explaining the purpose of the section and a checkbox for 'Email Notification of Newer Firmware Version' with 'Save Settings' and 'Don't Save Settings' buttons.
- FIRMWARE INFORMATION:** A table showing 'Current Firmware Version : 2.20', 'Current Firmware Date : 2007/05/15', and 'Latest Firmware Version : 2.20', with a link to 'Click here to access firmware online.'
- FIRMWARE UPGRADE:** A section with a red note: 'Note: Some firmware upgrades reset the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration from the Tools -> System screen.' Below this is an instruction: '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.' It includes an 'Upload' field with a 'Browse...' button and an 'Upload' button.
- FIRMWARE UPGRADE NOTIFICATION OPTIONS:** A section with two checkboxes: 'Automatically Check Online for Latest Firmware Version : ' and 'Email Notification of Newer Firmware Version : '.

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

DDNS

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.

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.

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

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

Timeout: Enter a time (in hours).

Status: Displays the current connection status to your DDNS server.

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists menu items: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'DYNAMIC DNS' and contains the following text:

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 your host name to connect to your game server no matter what your IP address is.

Sign up for D-Link's Free DDNS service at www.DLinkDDNS.com.

Buttons: Save Settings, Don't Save Settings

Below this is a configuration form for 'DYNAMIC DNS':

- Enable Dynamic DNS:
- Server Address: << Select Dynamic DNS Server
- Host Name: (e.g.: me.mydomain.net)
- Username or Key:
- Password or Key:
- Verify Password or Key:
- Timeout: 576 (hours)
- Status: Disconnect

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

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**.

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



Schedules

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 and end time for your schedule.

Save: Click **Save** to save your schedule. You must click Save Settings at the top 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.

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

SCHEDULES

The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.

Save Settings Don't Save Settings

ADD SCHEDULE RULE

Name:

Day(s): All Week Select Day(s)

Sun Mon Tue Wed Thu Fri Sat

All Day - 24 hrs:

Start Time: 0 : 0 AM (hour:minute, 12 hour time)

End Time: 0 : 0 AM (hour:minute, 12 hour time)

Save Clear

SCHEDULE RULES LIST

Name	Day(s)	Time Frame

Helpful Hints...

Schedules are used with a number of other features to define when those features are in effect.

Give each schedule a name that is meaningful to you. For example, a schedule for Monday through Friday from 3:00pm to 9:00pm, might be called "After School".

Click Save to add a completed schedule to the list below.

Click the Edit icon to change an existing schedule.

Click the Delete icon to permanently delete a schedule.

More...

WIRELESS

Device Information

This page displays the current information for the DIR-615. 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.

See the following page for more information.

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar contains 'DEVICE INFO', 'LOGS', 'STATISTICS', 'INTERNET SESSIONS', and 'WIRELESS'. The main content area is titled 'DEVICE INFORMATION' and contains the following details:

GENERAL

Time : Thursday, March 01, 2007 1:30:08 PM
Firmware Version : 3.00, 2007/02/12

WAN

Connection Type : DHCP Client
QoS Engine : Active
Cable Status :
Network Status :
Connection Up Time :
MAC Address : 00:03:64:00:01:23
IP Address :
Subnet Mask :
Default Gateway :
Primary DNS Server :
Secondary DNS Server :

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

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

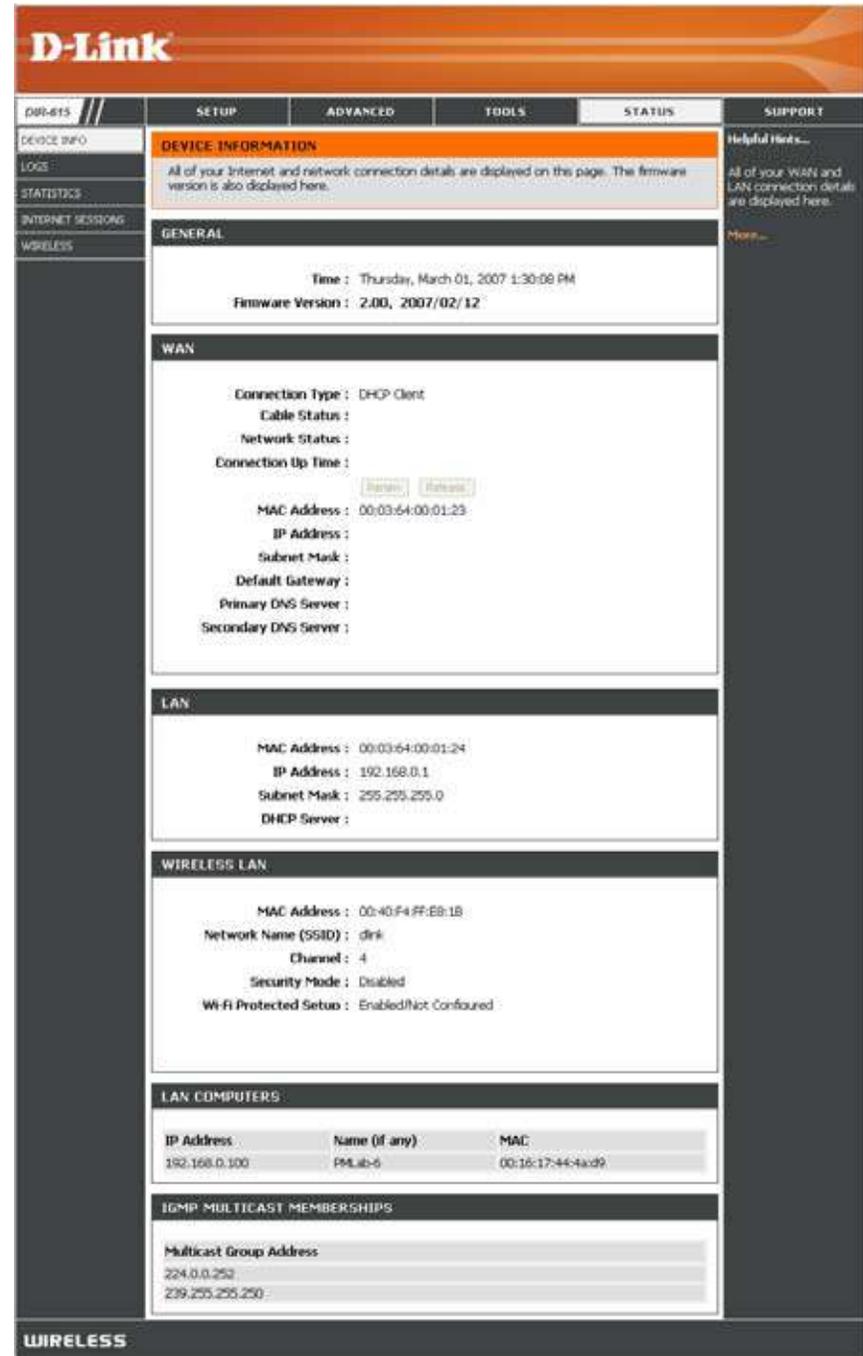
LAN: Displays the MAC address and the private (local) IP settings for the router.

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

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

IGMP Multicast

Memberships: Displays the Multicast Group IP Address.



Log

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.

What to View: You can select the types of messages that you want to display from the log. Firewall & Security, System, and Router Status messages can be selected.

View Levels: There are three levels of message importance: Informational, Warning, and Critical. Select the levels that you want displayed in the log.

Apply Log Settings: Will filter the log results so that only the selected options appear.

Refresh: Updates the log details on the screen so it displays any recent activity.

Clear: Clears all of the log contents.

Email Now: This option will send a copy of the router log to the e-mail address configured in the **Tools > Email Settings** screen.

Save Log: This option will save the router to a log file on your computer.

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

DEVICE INFO LOGS STATISTICS INTERNET SESSIONS WIRELESS

LOGS

System Logs

Use this option to view the router logs. You can define what types of events you want to view and the event levels 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.

LOG OPTIONS

What to View : Firewall & Security System Router Status

View Levels : Critical Warning Informational

Apply Log Settings Now

LOG DETAILS

Refresh Clear Email Now Save Log

[INFO] Thu Mar 01 13:35:51 2007 Log viewed by IP address 192.152.81.216
 [INFO] Thu Mar 01 13:33:49 2007 Blocked incoming TCP connection request from: 67.129.235.161:1360 to 67.130.140.145:1430
 [INFO] Thu Mar 01 13:33:46 2007 Previous message repeated 1 time
 [INFO] Thu Mar 01 13:32:43 2007 Blocked incoming TCP connection request from: 67.129.235.161:2097 to 67.130.140.145:5900
 [INFO] Thu Mar 01 13:32:40 2007 Previous message repeated 1 time
 [INFO] Thu Mar 01 13:32:27 2007 Blocked incoming TCP connection request from: 67.129.235.161:1701 to 67.130.140.145:135
 [INFO] Thu Mar 01 13:32:25 2007 Previous message repeated 1 time
 [INFO] Thu Mar 01 13:29:13 2007 Blocked incoming ICMP packet (ICMP type 8) from 84.112.37.99 to 67.130.140.145
 [INFO] Thu Mar 01 13:29:11 2007 Previous message repeated 1 time
 [INFO] Thu Mar 01 13:20:16 2007 Stored configuration to non-volatile memory
 [INFO] Thu Mar 01 13:20:12 2007 Policy Example 1 started; Internet access for IP address 192.168.0.100 changed to: Allowed, Web Sites - Restricted, Logged, Ports - Restricted
 [INFO] Thu Mar 01 13:20:12 2007 Internet access for IP address 192.168.0.100 set to: Allowed, Web Sites - None Blocked, Ports - None Blocked
 [INFO] Thu Mar 01 13:20:12 2007 One or more Internet access policies are in effect. Internet access will be restricted according to these policies
 [INFO] Thu Mar 01 13:09:15 2007 Blocked incoming ICMP packet (ICMP type 8) from 200.92.202.36 to 67.130.140.145
 [INFO] Thu Mar 01 13:09:13 2007 Previous message repeated 1 time
 [INFO] Thu Mar 01 13:07:13 2007 Allowed configuration authentication by IP address 192.152.81.216
 [INFO] Thu Mar 01 13:04:12 2007 Administrator logout

Helpful Hints...
 Check the log frequently to detect unauthorized network usage.
 You can also have the log mailed to you periodically. Refer to [Tools -> E-Mail](#).
 More...

Stats

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DIR-615 on both the Internet and the LAN ports. The traffic counter will reset if the device is rebooted.

D-Link

DIR-615 // SETUP ADVANCED TOOLS STATUS SUPPORT

DEVICE INFO
LOGS
STATISTICS
INTERNET SESSIONS
WIRELESS

TRAFFIC STATISTICS

Network Traffic Stats

Traffic Statistics display Receive and Transmit packets passing through your router.

Refresh Statistics Clear Statistics

LAN STATISTICS

Sent : 36459	Received : 22978
TX Packets Dropped : 0	RX Packets Dropped : 0
Collisions : 0	Errors : 0

WAN STATISTICS

Sent : 19151	Received : 31483
TX Packets Dropped : 0	RX Packets Dropped : 0
Collisions : 0	Errors : 0

WIRELESS STATISTICS

Sent : 10330	Received : 25649
TX Packets Dropped : 0	Errors : 0

Helpful Hints...
This is a summary of the number of packets that have passed between the WAN and the LAN since the router was last initialized.
More...

WIRELESS

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.

Local: The IP address and, where appropriate, port number of the local application.

NAT: The port number of the LAN-side application as viewed by the WAN-side application.

Internet: The IP address and, where appropriate, port number of the application on the Internet.

The communications protocol used for the conversation.

Protocol:

State: State for sessions that use the TCP protocol:

NO: None -- This entry is used as a placeholder for a future connection that may occur.

SS: SYN Sent -- One of the systems is attempting to start a connection.

EST: Established -- the connection is passing data.

FW: FIN Wait -- The client system has requested that the connection be stopped.

CW: Close Wait -- The server system has requested that the connection be stopped.

TW: Time Wait -- Waiting for a short time while a connection that was in FIN Wait is fully closed.

LA: Last ACK -- Waiting for a short time while a connection that was in Close Wait is fully closed.

CL: Closed -- The connection is no longer active but the session is being tracked in case there are any retransmitted packets still pending.

The direction of initiation of the conversation:

Out - Initiated from LAN to WAN.

In - Initiated from WAN to LAN.

Local	NAT	Internet	Protocol	State	Dir	Priority	Time Out
192.168.0.1:80	8080	192.152.81.222:1774	TCP	EST	In	196	7800
192.168.0.1:80	8080	192.152.81.222:1773	TCP	EST	In	255	7800
192.168.0.1:80	8080	192.152.81.222:1772	TCP	CL	In	169	225
192.168.0.1:80	8080	192.152.81.222:1771	TCP	CL	In	169	223
192.168.0.1:80	8080	192.152.81.222:1770	TCP	CL	In	169	231
67.130.140.145:68	68	67.130.140.152:67	UDP	-	Out	137	227
192.168.0.1:80	8080	192.152.81.222:1769	TCP	CL	In	169	198
192.168.0.1:80	8080	192.152.81.222:1768	TCP	CL	In	169	174

Dir: The preference given to outbound packets of this conversation by the QoS Engine logic. Smaller numbers represent higher priority.

Priority: The number of seconds of idle time until the router considers the session terminated. The initial value of Time Out depends on the type and state of the connection.

Time Out:

- 300 seconds** - UDP connections.
- 240 seconds** - Reset or closed TCP connections. The connection does not close instantly so that lingering packets can pass or the connection can be re-established.
- 7800 seconds** - Established or closing TCP connections.

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.

The screenshot shows the D-Link DIR-615 web interface. The top navigation bar includes 'DIR-615', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'WIRELESS' menu item is selected in the left sidebar. The main content area is titled 'WIRELESS' and contains the following information:

Associated Wireless Client List

Use this option to view the wireless clients that are connected to your wireless router.

NUMBER OF WIRELESS CLIENTS : 1

MAC Address	IP Address	Mode	Rate	Signal (%)
0015E9F98114	192.168.0.111	11g	54	80

On the right side, there is a 'Helpful Hints...' section with the text: 'This is a list of all wireless clients that are currently connected to your wireless router.' and a 'More...' link.

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

Support

The screenshot displays the D-Link DIR-615 web interface. At the top, the D-Link logo is visible. Below it, a navigation bar contains tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The SUPPORT tab is currently selected. On the left side, a vertical menu lists various sections: MENU, SETUP, ADVANCED, TOOLS, STATUS, and GLOSSARY. The main content area is titled 'SUPPORT MENU' and contains four sub-sections: 'SETUP HELP', 'ADVANCED HELP', 'TOOLS HELP', and 'STATUS HELP'. Each sub-section lists several help topics with blue hyperlinks. At the bottom of the interface, a 'WIRELESS' section is partially visible.

DIR-615	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
MENU	SUPPORT MENU				
SETUP	<ul style="list-style-type: none"> • Setup • Advanced • Tools • Status • Glossary 				
ADVANCED	SETUP HELP				
TOOLS	<ul style="list-style-type: none"> • Internet Connection • WAN • Wireless • Network Settings 				
STATUS	ADVANCED HELP				
GLOSSARY	<ul style="list-style-type: none"> • Virtual Server • Port Forwarding • Application Filter • Routing • Access Control • Web Filter • MAC Address Filter • Firewall • Inbound Filter • Advanced Wireless 				
	TOOLS HELP				
	<ul style="list-style-type: none"> • Admin • Time • Syslog • Email Settings • System • Firmware • Dynamic DNS • Wireless Connect Now • System Checks • Schedules • Virtual Services 				
	STATUS HELP				
	<ul style="list-style-type: none"> • Device Info • Wireless • Routing • Logs • Statistics • Active Sessions 				
	WIRELESS				

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-615 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK(Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

What is WPA?

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

The 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 Security Setup Wizard

To run the security wizard, browse to the Setup page and then click the **Launch Wireless Security Setup Wizard** button.

The screenshot displays the D-Link DIR-615 web interface. At the top, the D-Link logo is visible. Below it, a navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The main content area is titled 'WIRELESS SETTINGS' and contains three sections:

- ADD WIRELESS DEVICE WIZARD**: This section explains that the wizard is designed to assist in connecting a wireless device to the router. It includes a button labeled 'Add Wireless Device Wizard'.
- WIRELESS NETWORK SETUP WIZARD**: This section explains that the wizard is designed to assist in setting up a wireless network. It includes a button labeled 'Wireless Network Setup Wizard' and a note: '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.'
- MANUAL WIRELESS NETWORK SETUP**: This section explains that if a wireless network is already set up with WPA Protected Setup, manual configuration will destroy the existing network. It includes a button labeled 'Manual Wireless Network Setup'.

On the right side of the interface, there is a 'Helpful Hints...' section with three paragraphs of text providing additional guidance for users with existing networks, new users, and advanced users. A 'More...' link is located at the bottom of this section.

Auto: Select to auto generate your wireless security settings. This option can be used when using a wireless adapter that supports Wi-Fi Protected Setup.

Manual: Select this option to run the wireless setup wizard which will guide you to configure your wireless settings. Skip to page 73.

PLEASE SELECT CONFIGURATION METHOD TO SET UP YOUR WIRELESS NETWORK

Auto Select this option if your wireless device supports Wi-Fi Protected Setup

Manual Select this option if you want to setup your network manually

Prev Next Cancel Save

Wireless Wizard - Auto

The router has automatically generated your wireless settings. Please write down and keep this information for your reference. Click **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 Network Name (SSID) : DIR-615_c2000000

Security Mode : Auto (WPA or WPA2) - Personal

Cipher Type : TKIP and AES

Pre-Shared Key : 8f4e19459525a5e93a8d45e40a309d873259b353316566636c8062a6997eb6cc

Prev Next Cancel Save

Click **Next** to continue.

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

Select the level of security for your wireless network:

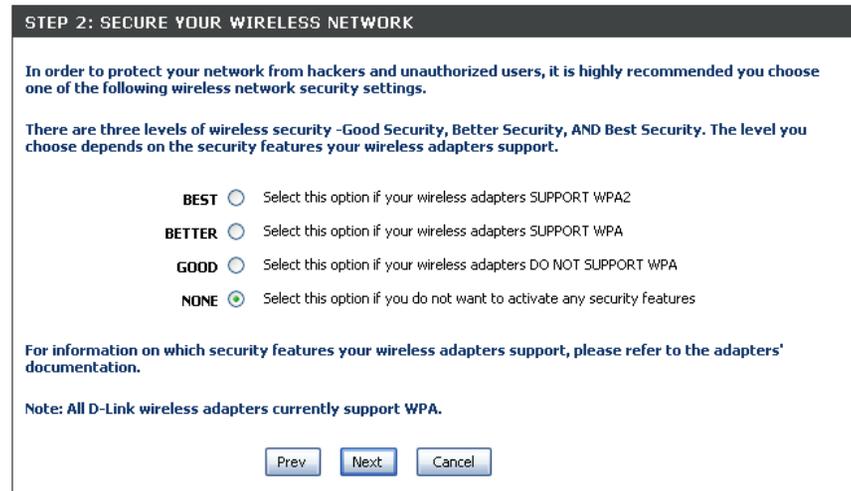
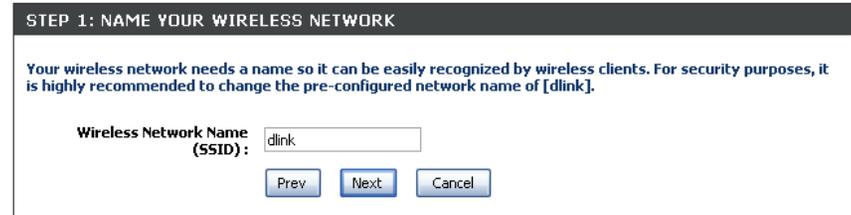
- Best - WPA2 Authentication
- Better - WPA Authentication
- Good - WEP Encryption
- None - No security

Click **Next** to continue.

If you selected Best or Better, enter a password between 8-63 characters.

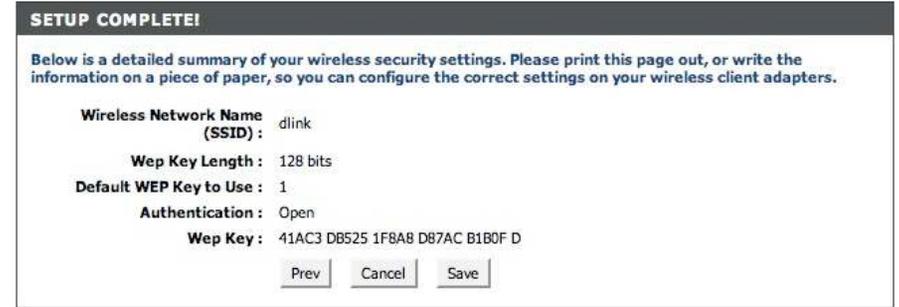
If you selected Good, enter 13 characters or 26 Hex digits.

Click **Next** to continue.



If you selected Good, the following screen will show you your WEP key to enter on your wireless clients.

Click **Save** to finish the Security Wizard.



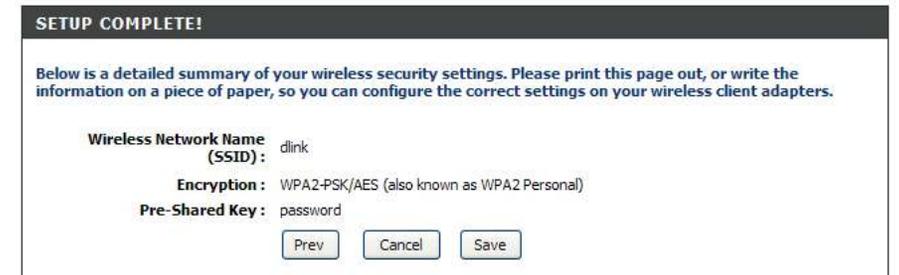
If you selected Better, the following screen will show you your Pre-Shared Key to enter on your wireless clients.

Click **Save** to finish the Security Wizard.



If you selected Best, the following screen will show you your Pre-Shared Key to enter on your wireless clients.

Click **Save** to finish the Security Wizard.



If you selected WPA-Enterprise, the RADIUS information will be displayed. Click **Save** to finish the Security Wizard.

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). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **WEP**.
3. Next to *WEP Key Length*, select the level of encryption (64 or 128-bit).
Hex - (recommended) Letters A-F and numbers 0-9 are valid.
4. Next to *WEP Key 1*, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.
5. Next to *Authentication*, select **Shared Key**.
6. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.

WIRELESS SECURITY MODE

To protect your privacy you can configure wireless security features. This device supports three wireless security modes, including WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.

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.

If you choose the WEP security option this device will **ONLY** operate in **Legacy Wireless mode (802.11B/G)**. This means you will **NOT** get 11N performance due to the fact that WEP is not supported by Draft 11N specification.

WEP Key Length : (length applies to all keys)

WEP Key 1 :

WEP Key 2 :

WEP Key 3 :

WEP Key 4 :

Default WEP Key :

Authentication :

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

WIRELESS SECURITY MODE

To protect your privacy you can configure wireless security features. This device supports three wireless security modes, including WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.

Security Mode : ▼

WPA

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

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

WPA Mode : ▼

Cipher Type : ▼

Group Key Update Interval : (seconds)

PRE-SHARED KEY

Enter an 8- to 63-character alphanumeric pass-phrase. For good security it should be of ample length and should not be a commonly known phrase.

Pre-Shared Key :

Configure WPA-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). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **WPA-Enterprise**.
3. Next to *WPA Mode*, select **Auto**, **WPA2 Only**, or **WPA Only**. Use **Auto** if you have wireless clients using both WPA and WPA2.
4. Next to *Cypher Type*, select **TKIP and AES**, **TKIP**, or **AES**. If you have wireless clients that use both types, use **TKIP and AES**.
5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed (3600 is default).
6. Next to *Authentication Timeout*, enter the amount of time before a client is required to re-authenticate (60 minutes is default).
7. Next to *RADIUS Server IP Address* enter the IP Address of your RADIUS server.
8. Next to *RADIUS Server Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
9. Next to *RADIUS Server Shared Secret*, enter the security key.

WIRELESS SECURITY MODE

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.

Security Mode:

WPA

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

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

WPA Mode:

Group Key Update Interval: (seconds)

EAP (802.1X)

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

Authentication Timeout: (minutes)

RADIUS server IP Address:

RADIUS server Port:

RADIUS server Shared Secret:

MAC Address Authentication:

10. If the *MAC Address Authentication* box is selected then the user will need to connect from the same computer whenever logging into the wireless network.
11. Click **Advanced** to enter settings for a secondary RADIUS Server.
12. Click **Apply Settings** to save your settings.

EAP (802.1X)

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

Authentication Timeout : (minutes)

RADIUS server IP Address :

RADIUS server Port :

RADIUS server Shared Secret :

MAC Address Authentication :

Optional backup RADIUS server:

Second RADIUS server IP Address :

Second RADIUS server Port :

Second RADIUS server Shared Secret :

Second MAC Address Authentication :

Connect to a Wireless Network

Add Wireless Device Wizard

This feature allows you to add any wireless devices that support Wi-Fi Protected Setup (WPS).

Click **Next**.



Select the method you would like to use for adding a new wireless device onto your wireless network.



PIN: PIN requires you to enter your wireless device's PIN information.

Enter the wireless device's PIN information in the box and click on **Connect**.

The screenshot shows a dark header with the text "STEP 2: CONNECT YOUR WIRELESS DEVICE". Below the header, the text reads "Please enter the PIN of your wireless device, then click on the Connect button below." There is a text input field labeled "Wireless Device PIN :". At the bottom, there are four buttons: "Prev", "Next", "Cancel", and "Connect".

Push Button: Push button allows you to connect a wireless device onto your wireless network through button press method.

Click on **Connect** button when you are ready.

The screenshot shows a dark header with the text "STEP 2: CONNECT YOUR WIRELESS DEVICE". Below the header, the text reads "Please push button on your wireless device, then click on the Connect button below." At the bottom, there are four buttons: "Prev", "Next", "Cancel", and "Connect".

To successfully add a new wireless device, you would have to enter either the PIN information or the button must be pressed within 120 seconds.

The screenshot shows a dark header with the text "STEP 2: CONNECT YOUR WIRELESS DEVICE". Below the header, the text reads "Please wait 118 seconds for your wireless device to be connected. If you want to stop the process, click on the Cancel button below." Below this text is a progress bar with a green segment on the left and the text "Adding wireless device: Started." At the bottom, there are four buttons: "Prev", "Next", "Cancel", and "Wireless Status".

Manual: Use this option if you uncertain if your wireless device support WPS, it will display your current wireless settings.

The screenshot shows a dark header with the text "STEP 2: CONNECT YOUR WIRELESS DEVICE". Below the header, the text reads "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." Below this text, the following settings are listed:
SSID: DIR_9a000000
Security Mode: Auto (WPA or WPA2) - Personal
Cipher Type: TKIP and AES
Pre-shared Key: b4ce49981a226d070017049bd3e1c3cfd4607f3129a98f367e1413588b00d67
At the bottom, there are four buttons: "Prev", "Next", "Cancel", and "Wireless Status".

Connect to a Wireless Network 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.



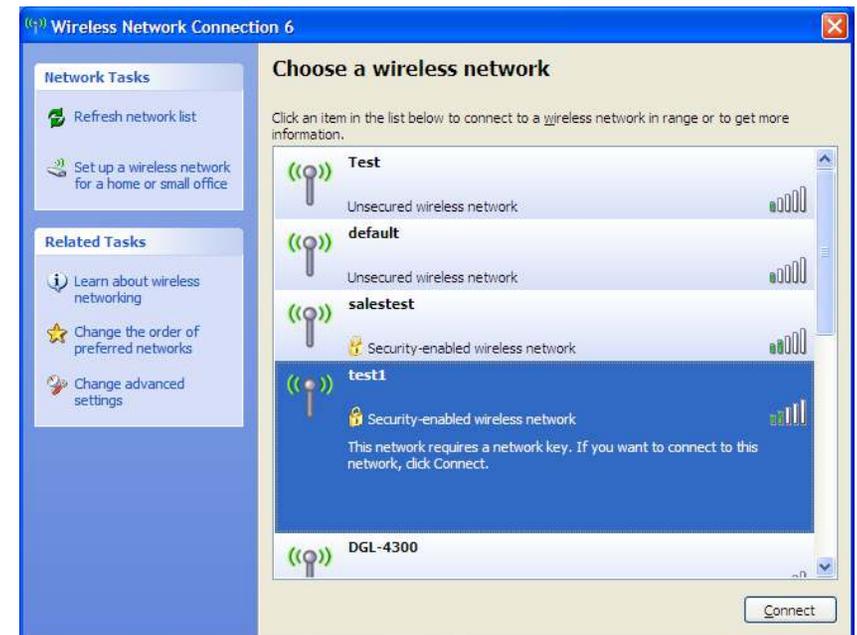
Configure WEP

It is recommended to enable WEP 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 WEP 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**.

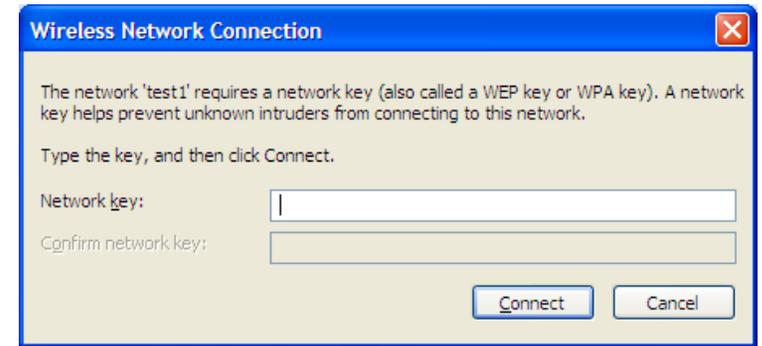


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the same WEP key 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 WEP settings are correct. The WEP key must be exactly the same as on the wireless router.



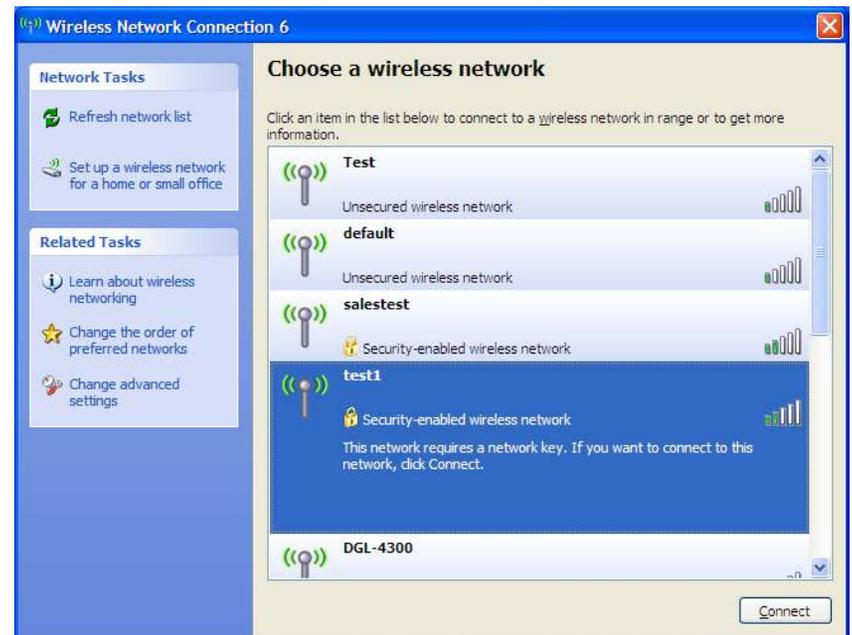
Configure WPA-PSK

It is recommended to enable WEP 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 WEP 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.



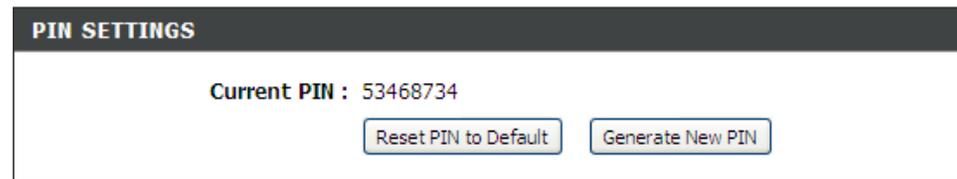
Setting Up Wi-Fi Protection (WCN 2.0 in Windows Vista)

The DIR-300 supports Wi-Fi protection, referred to as WCN 2.0 in Windows Vista. The instructions for setting this up depend on whether you are using Windows Vista to configure the Router or third party software.

Initial Router Configuration for Wi-Fi Protection

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 use the traditional Ethernet approach.

If you are running Windows Vista, tick the Enable checkbox on the **Wireless Network** window. Use the Current PIN that is displayed on the **Wireless Network** window or choose to click the **Generate New PIN** button or **Reset PIN to Default** button.



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

Setting Up a Configured Router

Once the Router has been configured, you can use the push button on the Router or third party software to invite a newcomer to join your Wi-Fi protected network. For maximum security, the software method is recommended. However, the push button method is ideal if there is no access to a GUI.

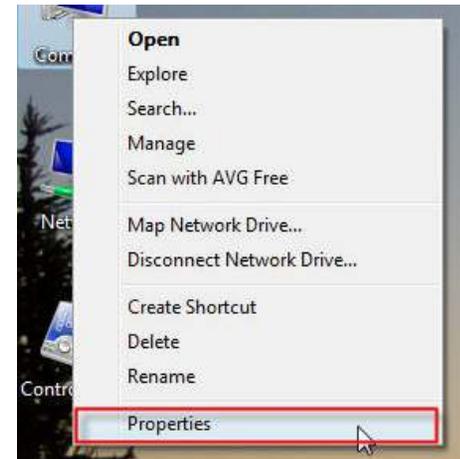
If you are using the Router's Wi-Fi Security push button option, simultaneously depress the push button located on the side of the Router and the button on the client (or virtual button on the client's GUI). Next click **Finish**. The Client's software will then allow a newcomer to join your secure, Wi-Fi protected network.

If you are using third party software, run the appropriate Wi-Fi Protected System utility. You will be asked to either use the push button method or to manually enter the PIN. Follow the on-screen instructions.

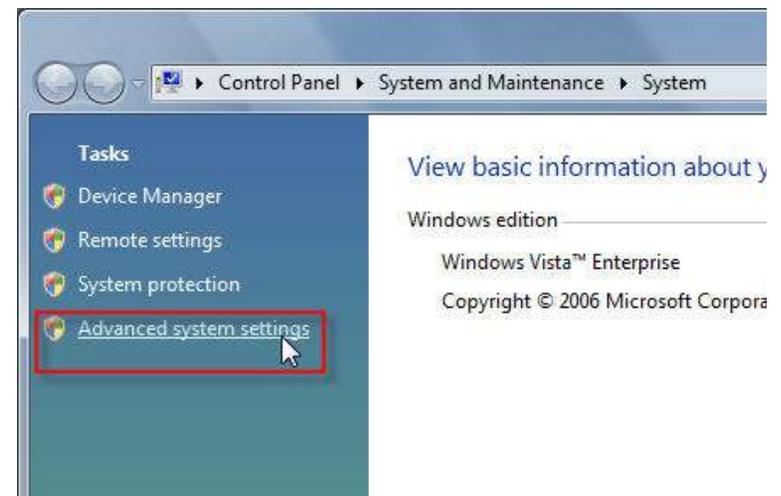
Changing the Computer Name and Joining a Workgroup

The following are step-by-step directions to change the computer name and join a workgroup.

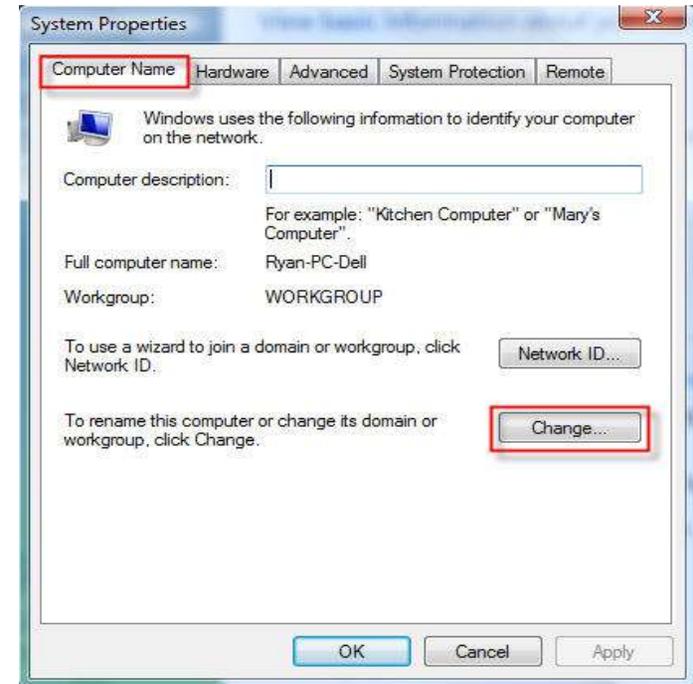
1. Click on **Properties**.



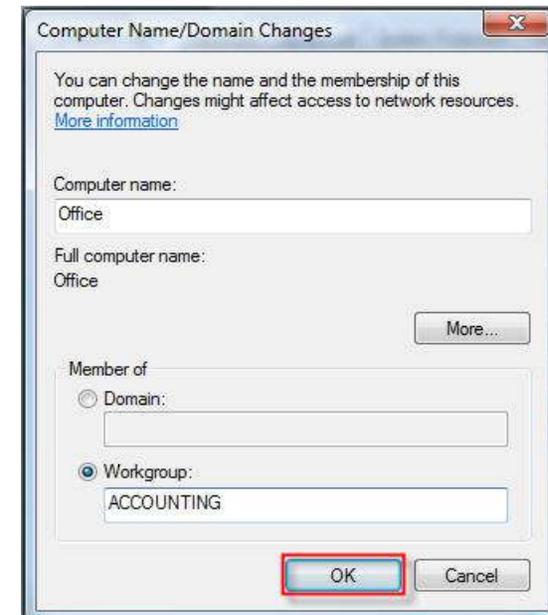
2. Click on the **Advanced system settings** link.



3. Click the **Computer Name** tab in the **System Properties** window and enter a description of your computer in the textbox. When you are finished, click the **Change** button.



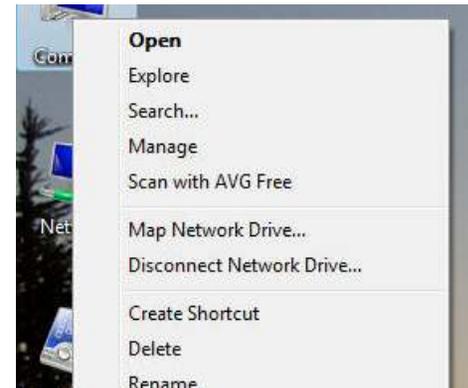
4. Go to the **Computer Name/Domain Changes** window and click the radio button next to the Workgroup you want to join. When you are finished, click the **OK** button.



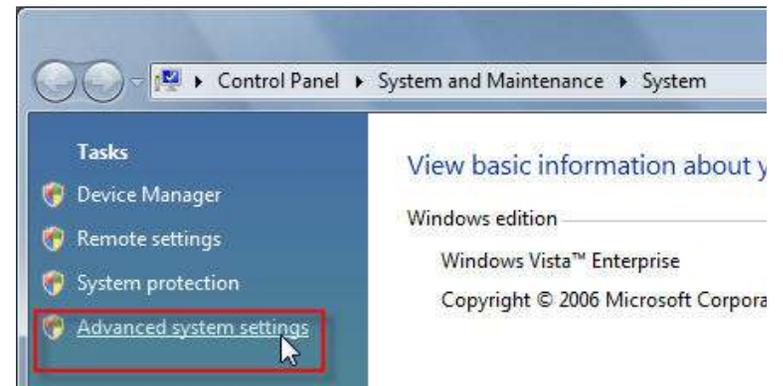
Configuring the IP Address in Vista

The following are step-by-step directions to configure the IP address in Windows Vista.

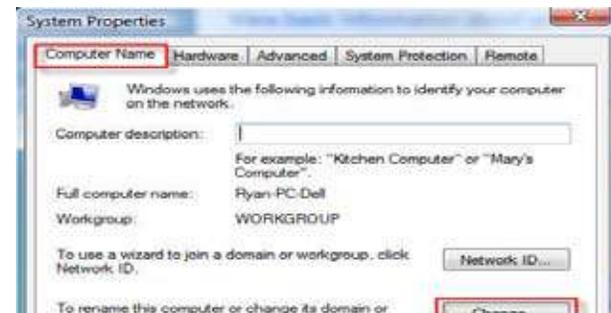
1. Click on **Properties**.



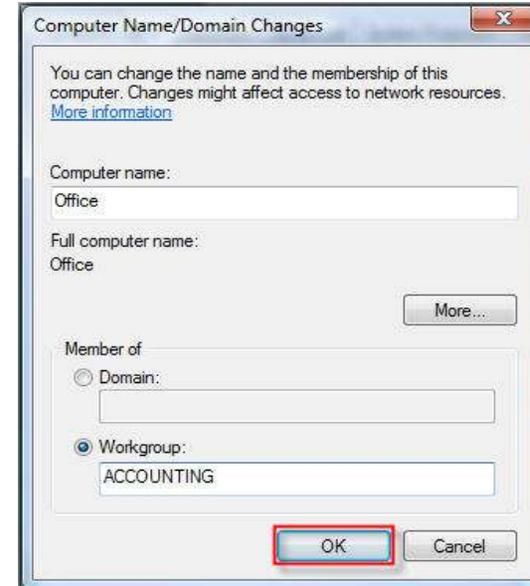
2. Go to the **Network and Internet** window and click the appropriate **Local Area Connection** icon.



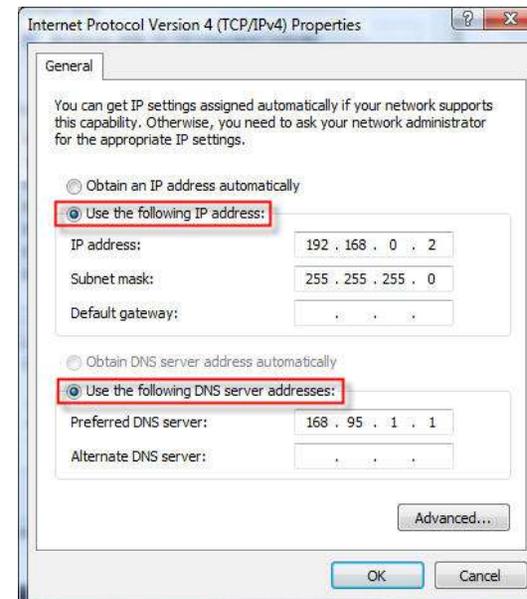
3. Right-click the **Local Area Connection** icon and then select **Properties** from the drop-down menu.



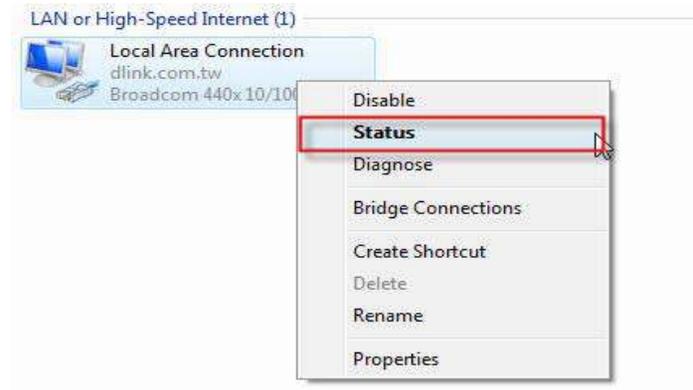
4. Tick the **Internet Protocol Version 4 (TCP/IPv4)** checkbox in the **Networking** tab in the **Local Area Connection Properties** window.



5. Click the “Use the following IP address” option in the **General** tab in the **Local Area Connections Properties** window and enter the desired IP address in the space offered. Then click the “Use the following DNS server addresses” option on the same tab and enter the desired DNS server information.



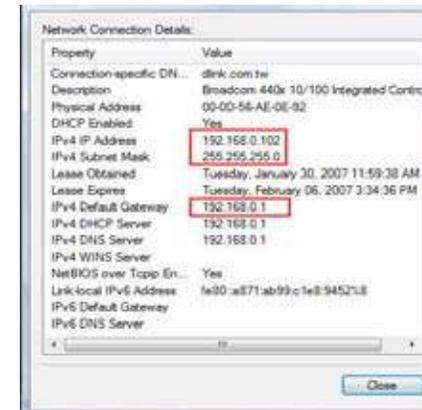
6. Right-click the **Local Area Connection** icon and then select **Status** from the drop-down menu.



7. Go to the **Local Area Connection Status** window and click the **Details** button.



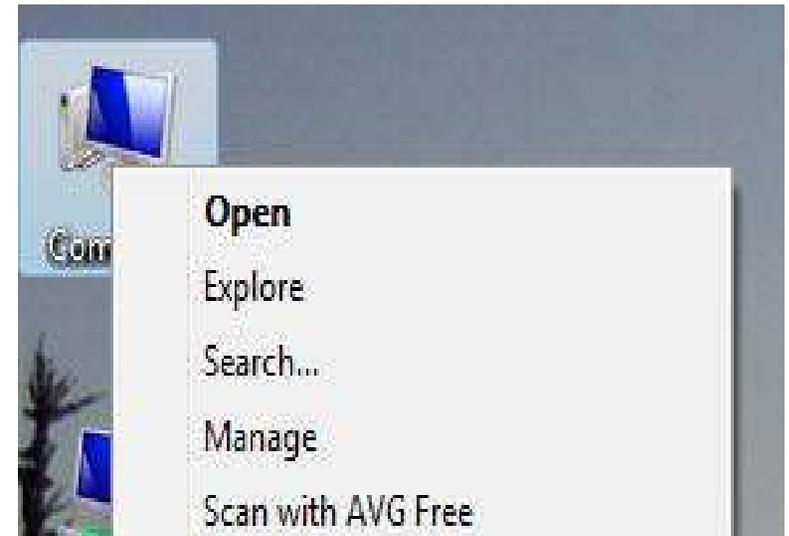
8. Confirm your new settings on the **Network Connection Status** window. When you are finished, click the **Done** button.



Setting Up a Connection or Network Wirelessly

The following are step-by-step directions to set up a wireless connection.

1. Click on **Set up a connection or network** in the **Network and Sharing Center** section.



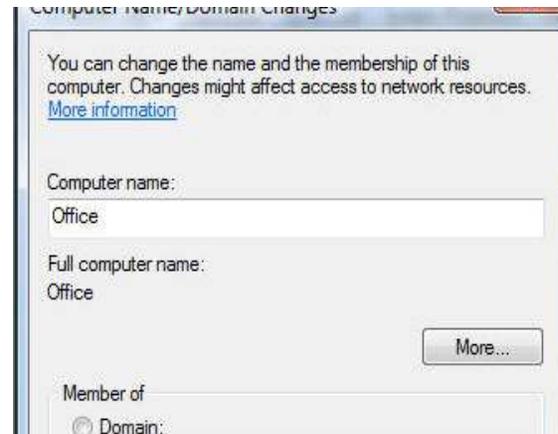
2. Go to the **Set up a connection or network** window and choose the **Set up a wireless router or access point** or **Set up a new wireless network for your home or business** option. Click the **Next** button.



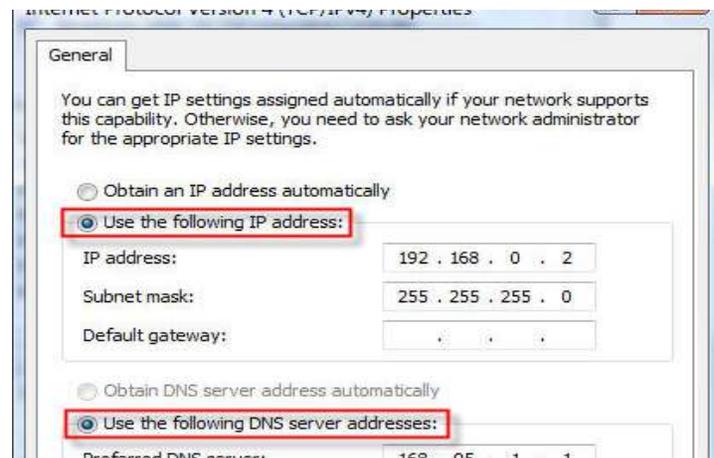
3. Click the **Next** button on the **Set up a wireless router or access point** window.



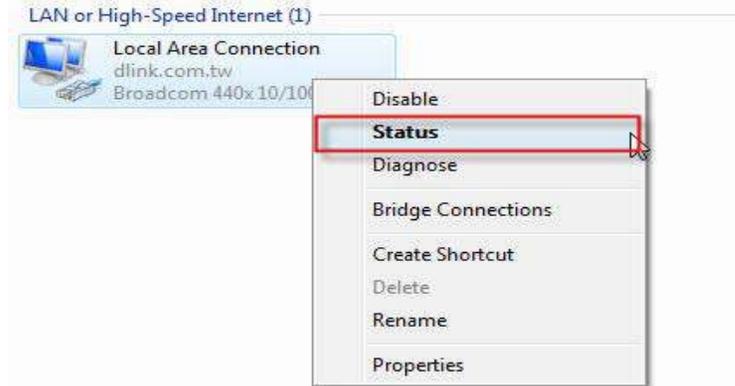
4. The following window displays the system progress.



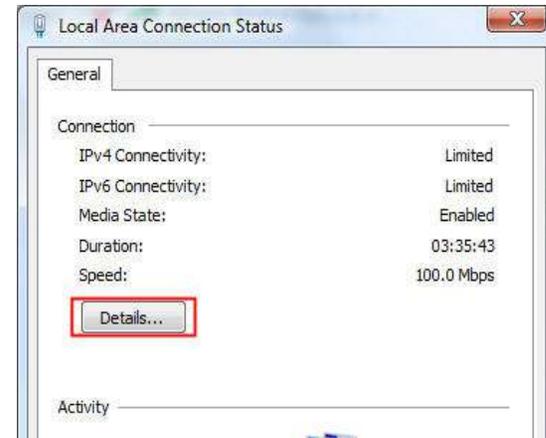
5. This window confirms that you want to create wireless network settings that are savable to a USB flash drive.



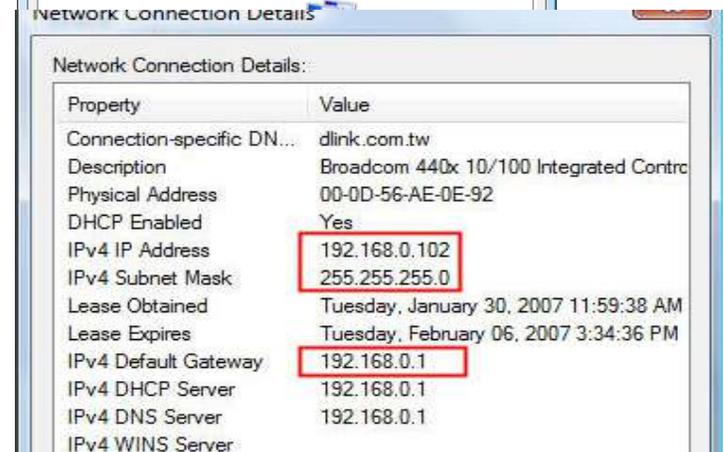
6. Enter a network name on the **Give your network a name** window in the **Set up a wireless router or access point** wizard. Click the **Next** button.



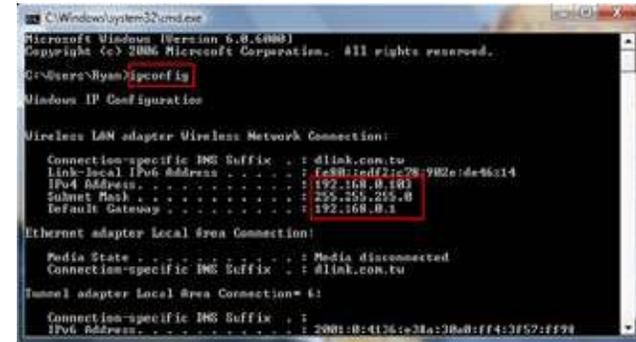
7. Enter a passphrase on the **Help make your network more secure with a passphrase** window in the **Set up a wireless router or access point** wizard. Click the **Show advanced network security options** link.



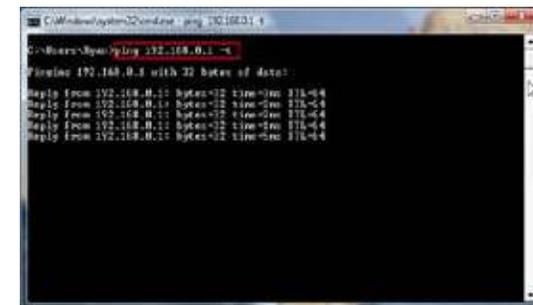
8. Select security method on the **Choose advanced network security options** window in the **Set up a wireless router or access point** wizard. Click the **Next** button.



9. Once you have selected the desired security method on the **Choose advanced network security options** window in the **Set up a wireless router or access point** wizard, click the **Next** button.



10. Select the desired file and printer sharing option on the **Choose file and printer sharing options** window in the **Set up a wireless router or access point** wizard. Click the **Next** button.

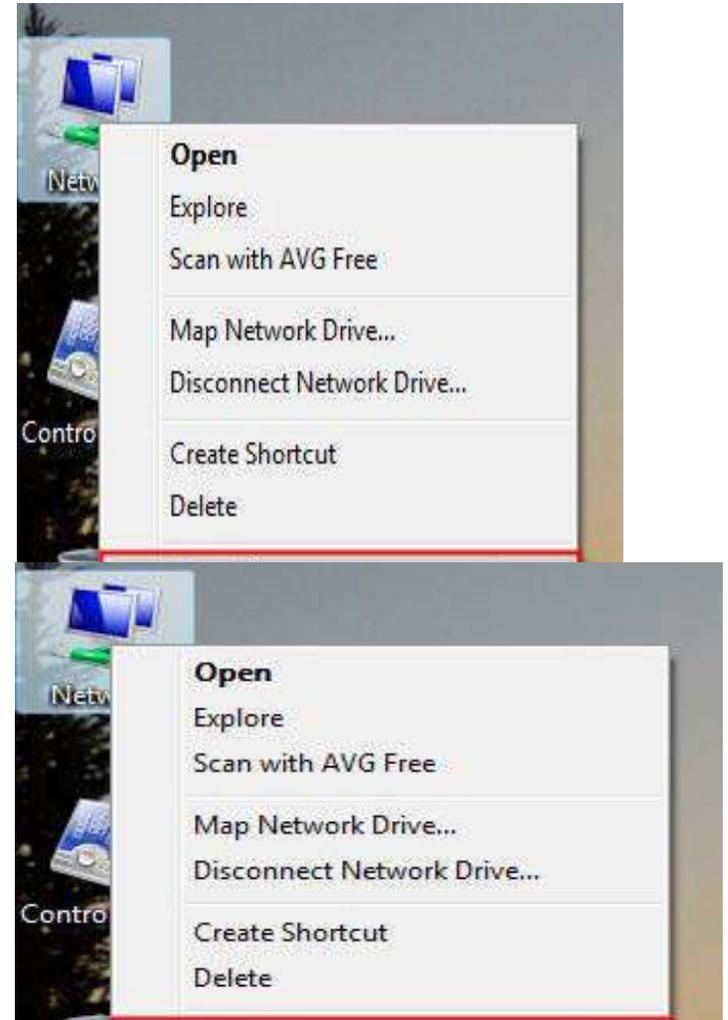


11. Once you have saved your network settings to USB, use the pull-down menu on the **Insert the USB flash drive into this computer** window in the **Set up a wireless router or access point** wizard to select a destination for your network settings. Click the **Next** button.



12. Once you have saved your network settings to USB, the **Copying settings to the USB drive** window in the **Set up a wireless router or access point** wizard opens to indicate the system progress.

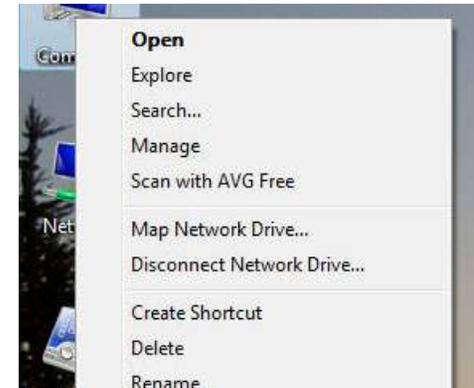
13. Once you are finished, the **To add a device or computer, follow these instructions** window in the **Set up a wireless router or access point** wizard opens. When you are finished, click the **Close** button.



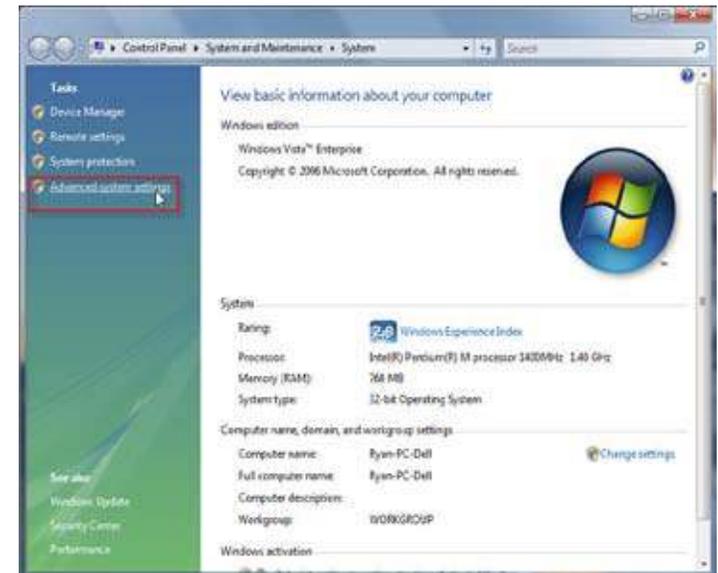
Connecting to a Secured Wireless Network (WEP, WPA-PSK & WPA2-PSK)

The following are step-by-step directions to set up a wireless connection.

1. Click on **Properties**.



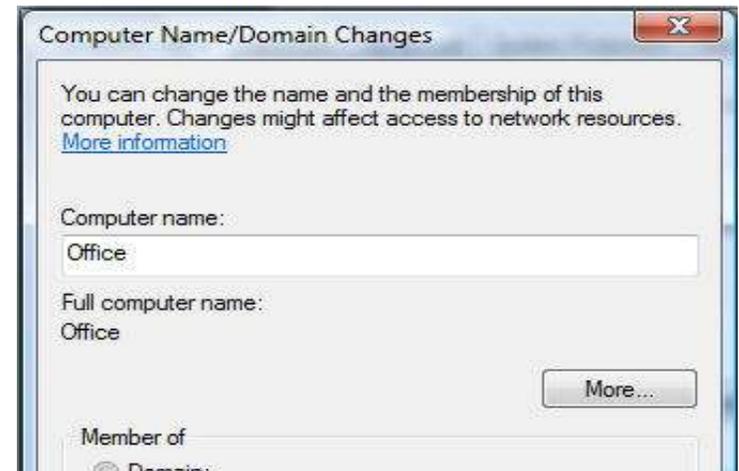
2. Click the **Manage network connections** link in the **Network and Sharing Center** window.



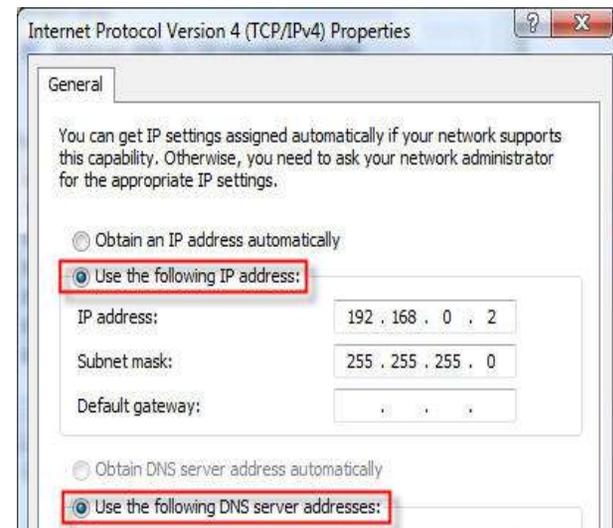
3. Right-click the **Wireless Network Connection** entry and then select **Connect/Disconnect** from the drop-down menu.



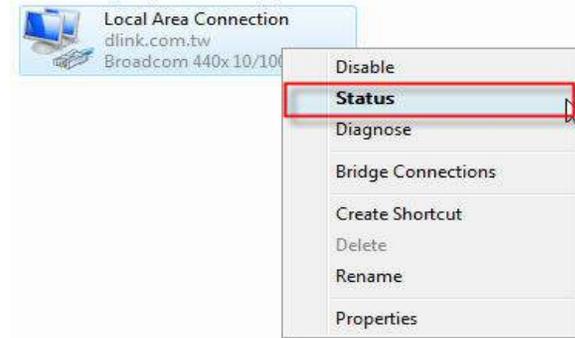
4. Select a network to connect to in the **Select a network to connect to** window in the **Connect to a network** wizard and then click the **Connect** button.



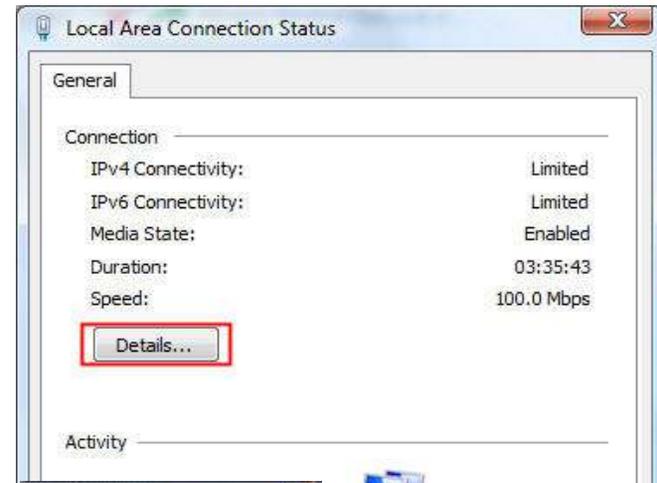
5. The following **Connect to a network** wizard window displays the system progress.



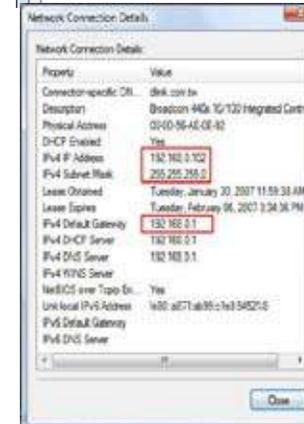
6. Enter the network security key or passphrase for the Router in the textbox provided in the **Type the network security key or passphrase for dlink300** window in the **Connect a network** wizard. When you are finished, click the **Connect** button.



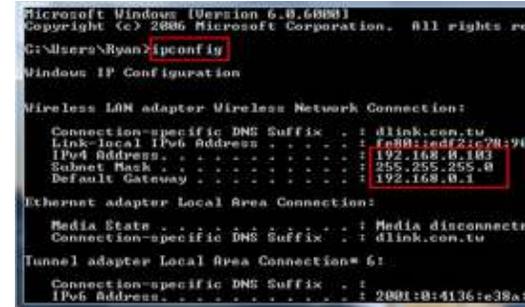
7. The following **Successfully connected to dlink300** window in the **Connect to a network** wizard is displayed. Choose to save to the network and/or start the new connection automatically. When you are finished, click the **Close** button.



8. The successful connection is displayed at the bottom of the Windows start up menu.



9. Confirm your new settings by calling up the command prompt and then entering the ipconfig command.



```
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Ryan>ipconfig

Windows IP Configuration

Wireless LAN adapter Wireless Network Connection:

    Connection-specific DNS Suffix . . . : dlink.com.tu
    Link-local IPv6 Address . . . . . : fe80::edf2:c70:9b
    IPv4 Address. . . . . : 192.168.0.183
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

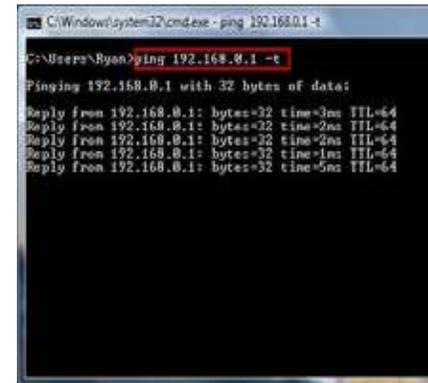
Ethernet adapter Local Area Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . : dlink.com.tu

Tunnel adapter Local Area Connection* 61:

    Connection-specific DNS Suffix . . :
    IPv6 Address. . . . . : 2001:0:4136:e38a:
```

10. To test the new IP address, use the Ping feature of the command prompt.



```
C:\Windows\system32\cmd.exe - ping 192.168.0.1 -t

C:\Users\Ryan>ping 192.168.0.1 -t

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=3ms TTL=64
Reply from 192.168.0.1: bytes=32 time=2ms TTL=64
Reply from 192.168.0.1: bytes=32 time=2ms TTL=64
Reply from 192.168.0.1: bytes=32 time=1ms TTL=64
Reply from 192.168.0.1: bytes=32 time=5ms TTL=64
```

Connecting to an Unsecured Wireless Network

The following are step-by-step directions to set up an unsecured wireless connection.

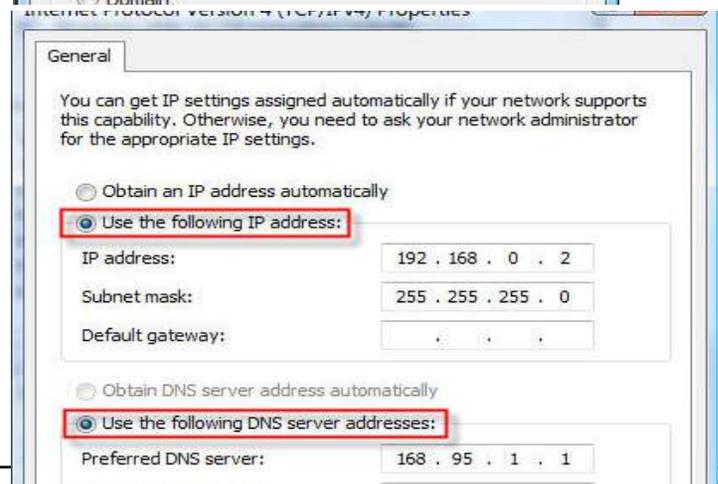
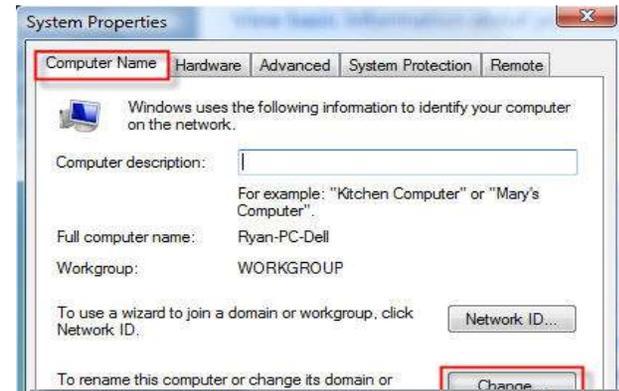
1. Click on **Properties**.



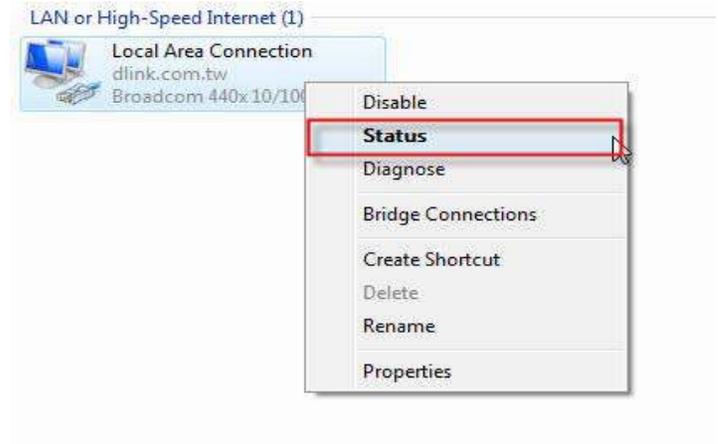
2. Go to the **Network and Sharing Center** window and click the **Manage Network Connections** link.



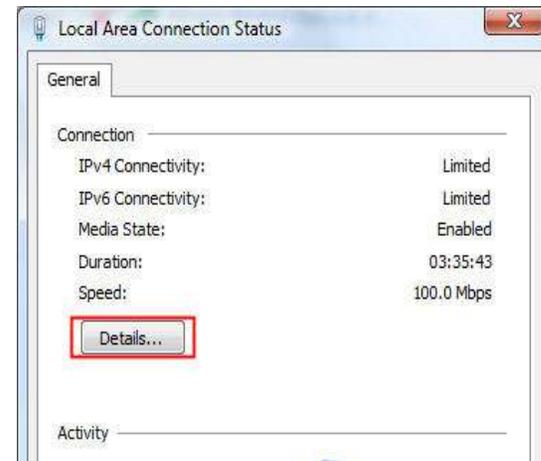
3. Right-click the **Wireless Network Connection** entry and then select **Connect/Disconnect** from the drop-down menu.
4. Select a network to connect to in the **Select a network to connect to** window in the **Connect to a network** wizard and then click the **Connect** button.
5. Confirm your desire to connect anyway on the following **Network Connection Status** window.



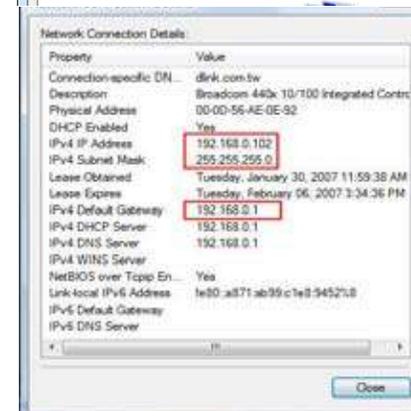
6. The following **Connect to a network** wizard window displays the system progress.



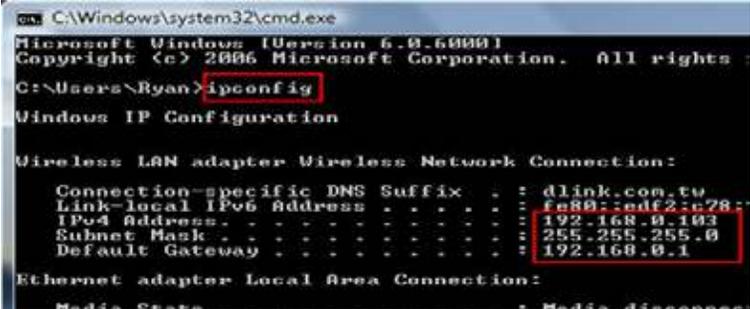
7. The following **Successfully connected to dlink300** window in the **Connect to a network** wizard is displayed. Choose to save to the network and/or start the new connection automatically. When you are finished, click the **Close** button.



8. The successful connection is displayed at the bottom of the Windows start up menu.



9. Confirm your new settings by calling up the command prompt and then entering the ipconfig command.



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Ryan>ipconfig

Windows IP Configuration

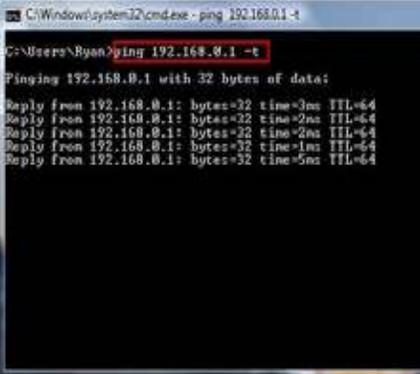
Wireless LAN adapter Wireless Network Connection:

    Connection-specific DNS Suffix . : dlink.com.tw
    Link-local IPv6 Address . . . . . : fe80::edf2:c78:
    IPv4 Address. . . . . : 192.168.0.103
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

Ethernet adapter Local Area Connection:

    Media State . . . . . : Media disconnected
```

10. To test the new IP address, use the Ping feature of the command prompt.



```
C:\Windows\system32\cmd.exe - ping 192.168.0.1 -t

C:\Users\Ryan>ping 192.168.0.1 -t

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=2ms TTL=64
Reply from 192.168.0.1: bytes=32 time=2ms TTL=64
Reply from 192.168.0.1: bytes=32 time=2ms TTL=64
Reply from 192.168.0.1: bytes=32 time=1ms TTL=64
Reply from 192.168.0.1: bytes=32 time=5ms TTL=64
```

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-615. 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 screen shots on your computer will look similar to the following examples.)

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

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

- Make sure you have an updated Java-enabled web browser. We recommend the following:
 - Internet Explorer 6.0 or higher
 - Netscape 8 or higher
 - Mozilla 1.7.12 (5.0) or higher
 - Opera 8.5 or higher
 - Safari 1.2 or higher (with Java 1.3.1 or higher)
 - Camino 0.8.4 or higher
 - Firefox 1.5 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any Internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:

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

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

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

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

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

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

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

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

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

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

Wireless Basics

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

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

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

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

What is Wireless?

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

Why D-Link Wireless?

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

How does wireless work?

Wireless works similar to how cordless 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 e-mail, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

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

Where is wireless used?

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

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

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

Tips

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

Centralize your router or Access Point

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

Eliminate Interference

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

Security

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

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DIR-615 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

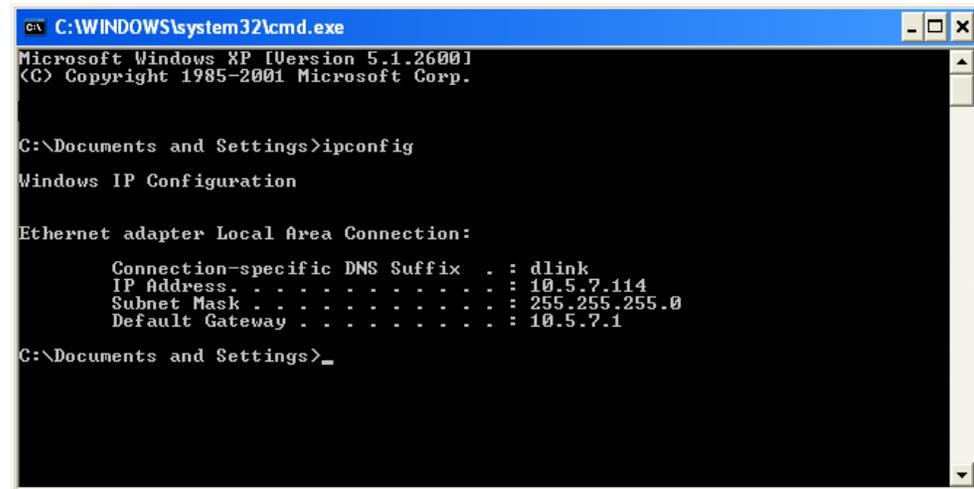
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

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

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>_
```

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network 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® 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 D-Link network adapter and select **Properties**.

Step 3

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

Step 4

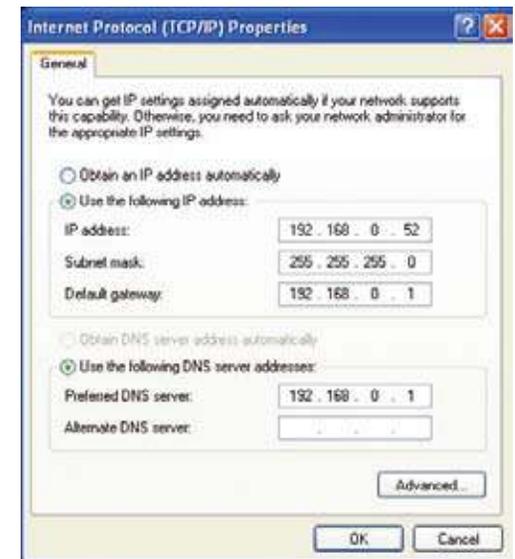
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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)
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

Security

- WPA-Personal
- WPA2-Personal
- WPA-Enterprise
- WPA2-Enterprise
- 64/128-bit WEP

Wireless Signal Rates*

- 108Mbps
- 54Mbps
- 36Mbps
- 18Mbps
- 11Mbps
- 6Mbps
- 2Mbps
- 48Mbps
- 24Mbps
- 12Mbps
- 9Mbps
- 5.5Mbps
- 1Mbps

MSC (0-15)

- 130Mbps (270)
- 104Mbps (216)
- 66Mbps (135)
- 52Mbps (108)
- 26Mbps (54)
- 12Mbps (27)
- 117Mbps (243)
- 78Mbps (162)
- 58.5Mbps (121.5)
- 39Mbps (81)
- 19.5Mbps (40.5)
- 6.5Mbps (13.5)

Frequency Range

2.4GHz to 2.483GHz

Transmitter Output Power

15dBm \pm 2dB

External Antenna Type

Two (2) detachable reverse SMA Antennas

LEDs

- Power
- WLAN
- Internet
- LAN (10/100)
- Status

Operating Temperature

32°F to 104°F (0°C to 40°C)

Humidity

95% maximum (non-condensing)

Safety & Emissions

- FCC
- CE

Dimensions

- L = 7.6 inches
- W = 4.6 inches
- H = 1.2inches

Warranty

11 Year

* Maximum wireless signal rate derived from IEEE Standard 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.